Amateur Radio Catalog • *Winter '92/93*

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AMATEUR ELECTRONIC SUPPLY® Inc.

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Watch for Future AES® Branch Store Openings!

Discover Why The Most Advanced Compact On The Road...

...Is So Easy To Operate.

Introducing the IC-3230 Dual Band Mobile

One-Touch Mobile Radio

The IC-3230 was designed for the mobile FM'er who wants high performance and ease of use. The 3230 is a **one-touch** transceiver for the most often-used functions. It's simple and safe to use while driving. Main functions are activated with **one-touch action switches.** Hold the same button in slightly longer to access secondary functions— no need to hunt for a separate function switch.

Human Engineered

The color-coded, illuminated controls and the display are laid out the way people naturally use radios: UHF on the right, VHF on the left, each independently controlled. And with the optional **Talk-Back** feature, your eyes never have to leave the road to change frequencies. The 3230's voice synthesizer tells you just where you are! The same option works with **crossband repeat,** which gives your DTMF handheld the range and power of your mobile. TalkBack lets your handheld tell you what frequency your 3230 is set to.

And, of course, **full-duplex operation** means you can use your mobile with the ease of a telephone— including 14 memories, single-button autopatch, autodialing and 911 access.

A Base Station, Too!

ICOM's mobiles aren't just for the road anymore. With the optional PS 45/PS 200 power supply, the fun continues! The PS45 becomes a docking station for your 3230 to slip into and becomes an excellent entry-level base station. Or buy one for home, one for the road, and stay in touch!

IC-3230: A High-Performance Package in an Easy-To-Use Compact.

For Information
(And Where You Can Get A Test Drive!)
Call

1-800-999-9877

ICOM America, Inc., 2380-116th Ave. N.E., Bellevue, WA 98004

All stated specifications subject to change without notice or obligation. All ICOM radios significantly exceed FCC regulations limiting spurious emissions. 3230792

ICOM
Simply the Best®

AMATEUR ELECTRONIC SUPPLY®

CONDENSED LISTING OF NEW AMATEUR RADIO EQUIPMENT

AEA (AEA)

	Reg	Sale
MM-3 Morse Machine Deluxe keyer	$189.00	179.95
AC-1 12vdc 600ma adaptor	21.00	
DC-1 Cigarette lighter cord	7.00	
DATA CONTROLLERS		
PK-88 RS-232 TNC controller	$149.00	134.95
AC-1 12vdc 600 ma adaptor	21.00	
PC-Pakratt-88 IBM program for PK-88	49.00	

Customers who send in warranty cards for AEA packet products purchased between October 1, 1992 and February 28, 1993 will receive a FREE "Get Started in Packet" book direct from AEA (U.S. & Canada only)

PK-232MBX Controller/int VHF/HF modem/FAX	379.00	319.95
AC-4 12vdc 1A power supply	32.00	
COM Pakratt w/FAX C-64 program; PK-88/232	79.00	74.95
MacRATT w/FAX Macintosh prog; PK-88/232	69.00	64.95
PC-Pakratt II w/FAX IBM Program; 88/232	69.00	64.95
Extra PK-232 to radio open ended **cable**	9.00	
IH CABLE PK-232 - Icom/Yaesu/Alinco HT	25.00	
IM CABLE PK-232 - Icom 8-pin mic cable	25.00	
IW CABLE PK-232 - Icom IC-W2A cable	25.00	
KA CABLE PK-232 - Kenwood 13-pin cable	30.00	
KH CABLE PK-232 - Kenwood HT cable	25.00	
KM CABLE PK-232 - Kenwood/Ali 8-pin mic	25.00	
YM CABLE PK-232 - Yaesu 8-pin mic cable	25.00	
RS-232 Y cable Δm	39.00	
Technical manual; PK-232	25.00	
AEA-FAX Facsimile & wire photo program	149.00	99.95
PCB-88 IBM compatible plug-in packet adapter	179.00	164.95
DSP-1232 Single port multi-mode controller	799.00	699.95
DSP-2232 Switchable ch multi-mode controller	999.00	899.95
ANTENNAS		
IsoLoop 10-30 150w 10-30MHz 43" loop/50'cable	$389.00	329.95
Extra **50'** shielded **loop cable**, connectors Dm	37.95	24.95
100' shielded **loop cable** w/connectors	39.00	
IsoPole 144 2m base station antenna	59.00	
IsoPole 220 220MHz base station antenna	59.00	
IsoPole 440 440MHz base station antenna	89.00	
HR-1 2m ½ wave telescopic whip w/BNC	24.00	
HR-2 220MHz ½ wave telescopic whip w/BNC	24.00	
HR-4 440MHz ½ wave telescopic whip w/BNC	24.00	
MISCELLANEOUS		
DL-1500 1.5kw 650MHz dry dummy load Dm	$ 84.95	49.95
HPF-1 75 or 300Ω high-pass filter Dfv	15.95	9.95
AVT Master Amiga Video System; SSTV/FAX	319.00	299.95
VSB-70 1w PEP 430MHz vestigial sideband ATV Xcvr	379.00	329.95
RLA-70 50w PEP 430MHz ATV amp w/ps	699.00	679.95
430-16 16 el 430MHz 14.3db beam ant	119.00	
ATV Workbook	14.99	
World Clock	25.00	

ARE (ARE)

ARE-20 Digitalker HT voice synth freq counter	$249.00	229.95

ARRL (ARR)

100 1992 Radio Amateur's Handbook D	$ 25.00	19.95

ARRL - continued

	Reg	Sale
101 1993 Radio Amateur's Handbook	25.00	
105 50 Years of ARRL	4.00	
110 200 Meters and Down (early ham radio)	8.00	
115 AX.25 (packet radio)	8.00	
120 Advanced Class License Manual	6.00	
125 Antenna Book	20.00	
130 Antenna Compendium	10.00	
135 Antenna Compendium II	12.00	
140 Antenna Impedance Matching	15.00	
145 Complete DX'er	12.00	
150 Data Book	12.00	
155 Extra Class License Manual	8.00	
160 FCC Rule Book	9.00	
165 First Steps in Radio	5.00	
170 General Class License Manual	6.00	
175 Gil Cartoon Book	5.00	
180 Grid Locator Atlas	5.00	
185 Hints and Kinks	9.00	
190 Hostage in the Woods	5.00	
195 Introduction to Morse Code cassettes	10.00	
200 Log Book	3.50	
205 Low Band Dxing D	10.00	
210 Morse Code the Essential Language	6.00	
215 Morse Tutor software for IBM	20.00	
220 Night Signals	5.00	
225 Novice Antenna Notebook	10.00	
230 Novice Notes: The Book	6.00	
235 Now You're Talking (new ham)	19.00	
240 Operating Manual	18.00	
245 Oscarlocator	8.50	
250 Passport to Worldband Radio	16.95	
255 QST binder	12.00	
260 RFI-How to Find It & Fix It	15.00	
265 Radiogram message blanks pad	2.00	
270 Repeater Directory	6.00	
275 Satellite Anthology	8.00	
280 Satellite Experimenter's Handbook	20.00	
285 Set 1 5-10 wpm code practice cassettes	10.00	
290 Set 2 10-15 wpm code practice cassettes	10.00	
295 Set 3 15-22 wpm code practice cassettes	10.00	
300 Set 4 13-14 wpm code practice cassettes	10.00	
305 Solid State Design	12.00	
310 Technician Class License Manual	6.00	
315 Transmission Line Transformers	20.00	
320 Transmitter Hunting	19.00	
325 U.S. Call Area Map	3.00	
330 W1FB's Antenna Notebook	10.00	
335 W1FB's Help for New Hams	10.00	
340 W1FB's QRP Notebook	10.00	
345 World Map	12.00	

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ARRL - continued

	Reg	Sale
350 Yagi Antenna Design	15.00	
355 Your Gateway to Packet Radio	12.00	
TOMPKINS BOOKS		
360 CQ Ghost Ship	$ 5.00	
365 DX Brings Danger	5.00	
370 Death Valley QTH	5.00	
375 Grand Canyon QSO	5.00	
380 Murder by QRM	5.00	
385 SOS at Midnight	5.00	
RSGB PUBLICATIONS		
390 HF Antennas D	$ 15.00	
400 RSGB Operating Manual	14.00	
405 Radio Communications Handbook	35.00	
410 VHF/UHF Manual	30.00	

ACE SYSTEMS (ACE)

Opto Keyer Electronic keyer, batt or DC	$ 39.95	
Opto Iambic Electronic keyer, batt or DC	59.95	
Opto Deluxe Iambic electronic keyer	84.95	

AIM (AIM)

24-7735P Coax stripper; RG-58/59/62	$ 35.85	19.95
24-7736P Coax stripper; RG-59/6/8281	35.85	19.95
24-7739P Coax stripper; RG-8/11/213	59.85	29.95
37-208 6-socket wall surge protector	32.85	19.95
37-503 6-socket surge/EMI/RFI filter	83.85	39.95
38-305BX 500ma 3/4.5/6/7.5/9/12vdc adapt Dm	16.50	8.95
38-384 4A power supply, 5A surge	77.85	39.95
48-1123TP 8w 1700rpm 4.68" sq AC fan	36.00	19.95
48-1921TP 10w 2700rpm 3.62" sq AC fan	40.50	19.95

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CODES SHOWN NEXT TO PRICES

(T) • Item too large or too heavy for UPS. Truck shipment only. No COD – send payment in advance or use Charge Card for merchandise. Freight charges will be collected upon delivery.

NOTE: Charges for truck shipments from 1-99 lbs are running a minimum of $80.00, plus local destination charges. It is advisable to contact a local freight office for a quotation.

(A) • Item too large or too heavy for UPS, and the value too great for truck insurance. Air Freight shipment only. No COD – send payment in advance or use Charge Card for merchandise. freight charges will be collected up on delivery.

(*) • **CLOSEOUT** – normally available at all stores, qty. limited

(D) • **DISCONTINUED** by manufacturer but still available from stock in limited quantities when this price list was published.

(†) • **TEMPORARY LOW PRICE** due to Special Purchase, overstock, etc. Quantities may be limited at price shown.

(Δ) • Item not discontinued by manufacturer but probably will not be available from **AES®** stores when present stock sold out.

STORE LOCATION CODES: **(m)** Milwaukee; **(w)** Wickliffe; **(f)** Orlando; **(c)** Clearwater; **(v)** Las Vegas.

STORE HOURS • **Mon. thru Fri. 9-5:30; Sat. 9-3**

AES® Store Locations	Phone	Toll Free	FAX
Milwaukee, WI 53223; 5710 W. Good Hope Road	(414) 358-0333	1-800-558-0411	(414) 358-3337
Wickliffe, OH 44092; 28940 Euclid Avenue	(216) 585-7388	1-800-321-3594	(216) 585-1024
Orlando, FL 32803; 621 Commonwealth Avenue	(407) 894-3238	1-800-327-1917	(407) 894-7553
Clearwater, FL 34625; 1898 Drew Street	(813) 461-4267		(813) 443-7893
Las Vegas, NV 89106; 1072 N. Rancho Drive	(702) 647-3114	1-800-634-6227	(702) 647-3412

Watch for Future AES® Branch Store Openings!

AIM - continued

	Reg	Sale
48-1923TP 6w 1700rpm 3.62" sq AC fan	40.50	19.95
48-2921P 3.1w 3100rpm 3.62" sq DC fan	31.50	19.95
48-2923P 1.6w 2300rpm 3.62" sq DC fan	31.50	19.95
48-3120P 4.68" finger guard	2.95	
48-3920P 3.62" finger guard	4.05	
48-3250P 4' AC cord w/plug for fan	2.95	
64-3UUP 3' RG-58 w/PL-259s	7.00	
64-6UUP 6' RG-58 w/PL-259s	8.00	
64-9UUP 9' RG-58 w/PL-259s	9.00	
64-12UUP 12' RG-58 w/PL-259s	10.00	
64-18UUP 18' RG-58 w/PL-259s	11.00	

ALINCO (ALI)

	Reg	Sale
DJ-120T 2.5w 2m FM HT/batt/cgr/TTP .....D*	$247.95	199.95
DJ-200T 2.5w 220 FM HT/batt/cgr/TTP .....Dw		239.95
EBP-6NA 9.6v 450ma nicad batt .....Dwfv	56.95	44.95
EBP-7NAZ 7.2v 700ma nicad batt .....Dv	54.95	
EBP-8NAZ 12v 700ma nicad batt .....Dmw	77.95	
EBP-9NAZ 7.2v 500ma nicad batt .....Δwv	54.95	49.95
EDC-2 Cig charging cord; EBP-7NAZ .....Df	8.95	
EDC-8Z Mobile DC power cable w/filter	18.95	
EDC-11 Extra AC wall cgr for 8NAZ .....Dw	22.95	
EMS-1Z Speaker/mic	36.95	
ESC-9 Leatherette case; DJ-500T .....Dm	27.95	22.95
DJ-162T 2.5w 2m FM HT/batt/cgr/TTP	276.95	249.95
DJ-162TD 2m FM HT/batt holder/TTP .....D		229.95
DJ-560T/A 2w 2m/440 FM HT/batt/cgr/TTP D*		329.95
EBP-10NA 7.2v 700ma quick charge batt	38.95	
EBP-12NA 12v 700ma quick charge batt	54.95	
EDC-16 Cigarette lighter cable	14.95	
EDC-21 Extra wall cgr for EBP-10NA	21.95	
EDC-22 Wall charger for EBP-12NA	21.95	
EDC-26 DC cord/charger w/filter; EBP-10NA	16.95	
EDH-1 Dry cell battery case	16.95	
EJ-6U Tone squelch unit	44.95	
EME-4 Ear/microphone w/PTT	29.95	
EME-6 Earphone	11.95	
EME-10 Headset w/VOX/PTT	63.95	
EMS-2Z Speaker/mic	33.95	
ESC-10 Carrying case; DJ-162T w/EBP-10NA	19.95	
ESC-11 Carrying case; DJ-560T/A, EBP-10NA	19.95	

For a limited time, AES will accept coupons from Yaesu, Kenwood & Icom on ALINCO products. See the chart on the back of this catalog for all the exciting details and net prices! Tentatively ends 12/31/92.

	Reg	Sale
DJ-F1T 2w 2m FM HT/batt/cgr/TTP	309.95	289.95
DJ-F1T/HP 5w 2m FM HT/batt/cgr/TTP	334.95	299.95
DJ-180T 2w 2m FM HT/batt/cgr/TTP	219.95	
DJ-580T 2.5w 2m/440 FM HT/batt/cgr/TTP ..†	445.95	389.95
EBC-3 Belt clip	2.95	
EBC-5 Shoulder belt w/soft case	48.95	
EBP-14N 7.2v 400ma thin nicad batt	56.95	
EBP-16N 7.2v 700ma nicad battery	40.95	
EBP-18N 12v 600ma nicad battery	65.95	
EBP-20N Extra 7.2v 700ma batt; 180/580T	43.95	
EBP-22N 12v 600ma batt for DJ-180/580T	64.95	
EDC-24 Charger for EBP-14/16/18	19.95	
EDC-34 Quick charger	89.95	
EDC-36 Mobile DC power cable w/filter	16.95	
EDC-37 13.8v power cable	5.95	
EDC-43 DC power cable w/filter	6.95	
EDH-5 AA dry cell pack	15.95	
EDH-6 AA dry cell pack for DJ-180/580T	16.95	
EJ-12U Tone decode unit	45.95	
EME-4 Ear/microphone w/PTT	29.95	
EME-6 Earphone	11.95	
EME-10 Headset w/VOX/PTT	63.95	
EMS-2Z Speaker/mic for DJ-180/580T	33.95	
EMS-8Z Remote speaker/mic	37.95	
ESC-15 Soft case for EBP-16N	16.95	
ESC-17 Soft case; DJ-580T w/EBP-20N	19.95	
DR-112T 45w 2m FM Xcvr/LCD w/TTP mic	364.95	329.95
DR-119T 45w 2m FM Xcvr w/TTP mic	385.95	349.95
DR-570T Dlx 45/35w 2m/440 FM Xcvr/TTP mic	607.95	549.95
DR-599T 2m/440 FM Xcvr/TTP mic	708.95	649.95
EDC-20 Separation mounting kit	37.95	
EJ-7U Tone squelch unit	62.95	

ALINCO - continued

	Reg	Sale
EJ-8U DTMF squelch unit	43.95	
DR-1200T 25w 2m FM data radio.....†	275.95	249.95
EHM-36A TTP mic for DR-1200T	33.95	
SR-4 Simplex repeater controller	399.95	369.95
DK-4 Duplex upgrade kit for SR-4	154.95	
SR-4D Duplex repeater controller	534.95	499.95
ADI-4 Adaptor cable for Icom mobile	15.95	
ADK-4 Adaptor cable for Kenwood mobile	15.95	
ADY-4 Adaptor cable for Yaesu mobile	15.95	
ADU-4 Universal adaptor cable	12.95	

ALLIANCE (ALL)

HD-73 Heavy duty antenna rotor	$279.60	169.95

ALPHA DELTA (ALP)

R-T 200w 500 MHz lightning protector	$ 32.95	
Extra **arc-plug** cartridge for **R-T**	12.95	
RT/N 200w thru 1 GHz type N protector	39.95	
Extra **arc-plug** cartridge for **RT/N**	12.95	
HV 2kw 500 MHz lightning protector	35.95	
Extra **arc-plug** cartridge for **HV**	15.95	
HV/N 2kw thru 1 GHz type N protector	42.95	
Extra **arc-plug** cartridge for **HV/N**	15.95	
LT 200w thru 10m 'T' SO-239 protector	22.95	
Extra **arc-plug** cartridge for **LT** or LT/N	17.95	
Extra **arc-plug** for **CLP** .....Dmf	9.00	7.95
Delta-2 500 MHz 2-pos coax switch/protector	49.95	
Delta-2/N 1.3 GHz 2-pos type N switch/protector	64.95	
Delta-4 500 MHz 4-pos coax switch/protector	74.95	
Delta-4/N 1.3 GHz 4-pos type N switch/protector	89.95	
D-4 Extra arc-plug; Delta-2/2N/4/4N	9.00	
DX-A 160-80-40m twin sloper antenna	59.95	
DX-B 160-80-40-30m 60' sloper ant	69.95	
DX-CC 80-10m 5-band 82' no trap, no tuner dipole	99.95	
DX-DD 80-40m 82' Delta Dipole antenna	79.95	
DX-EE 40-10m 4-band 40' no trap, no tuner dipole	89.95	
DX-SWL AM broadcast-13m 60' SWL sloper ant	69.95	
DX-SWL-S 90-13m 40' SWL sloper ant	59.95	

ALUMA TOWER (ALU)

T-35H 35' heavy duty crank-up alum tower .T	2240.00	2016
T-40H 40' heavy duty crank-up alum tower .T	1560.00	1404
T-50H 50' heavy duty crank-up alum tower .T	1820.00	1638
T-60H 60' heavy duty crank-up alum tower .T	2640.00	2376
T-75H 75' heavy duty crank-up alum tower .T	3920.00	3528
T-40XHD 40' extra HD crank-up alum tower .T	3020.00	2718
T-50XHD 50' extra HD crank-up alum tower .T	3560.00	3204
T-60XHD 60' extra HD crank-up alum tower .T	3920.00	3528

See literature for configuration of towers and accs

102A Electric winch	532.00	479
ABCD Alum guy wire bkts, welded .....set of 3	35.00	32
B-195 SS base; non-tilt/concrete, B-section	57.00	51
C-194 SS base; non-tilt/concrete, C-section	65.00	59
D-261 SS base; non-tilt/concrete, D-section	140.00	126
B-204 2" ball bearing thrust unit; B-section	155.00	139
C-208 2" ball bearing thrust unit; C-section	188.00	169
D-210 2" ball bearing thrust unit; D-section	218.00	196
B-216 Fixed center mast support 2 needed,ea	96.00	86
C-217 Fixed center mast support 2 needed,ea	96.00	86
D-218 Fixed center mast support 2 needed,ea	96.00	86
B-222 Antenna side mount; B-section	255.00	229
C-223 Antenna side mount; C-section	255.00	229
D-224 Antenna side mount; D-section	255.00	229
B-227 Adj building mtg bkt; B-section	215.00	193
C-228 Adj building mtg bkt; C-section	240.00	216
D-229 Adj building mtg bkt; D-section	275.00	247
B-230 Bldg mtg bkt for side tilt; B-section	270.00	243
C-231 Bldg mtg bkt for side tilt; C-section	299.00	269
D-232 Bldg mtg bkt for side tilt; D-section	320.00	288
B-236 Steel base plate, temporary mtg	59.00	53
C-237 Steel base plate, temporary mtg	89.00	80
D-238 Steel base plate, temporary mtg	114.00	102
B-264 Hvy duty tilt-top base; B-section	450.00	405
C-255 Hvy duty tilt-top base; C-section	490.00	441
D-215 Hvy duty tilt-top base; D-section	520.00	468
MP-1 12' 3" diameter mounting pole .....T	723.00	651
MP-2 14' 4" diameter mounting pole .....T	840.00	756

See literature for configuration of towers and accs

ALUMA TOWER - continued

All ALUMA TOWER products are drop-shipped (shipped direct to you from the ALUMA TOWER factory). On these factory drop-shipments we prefer payment in full with order, however, we will accept your credit card with the understanding that we will process the charge when we order the merchandise from the factory. This means that you may be billed before you receive your drop-shipped merchandise. Shipment is FOB Vero Beach, Florida via truck, COD for freight charges only. Freight charges will be collected upon delivery by the carrier. Please allow sufficient time for delivery on these special order products. Most truck lines will not unload the tower for you, so please be sure to have enough manpower and/or equipment on hand when your tower is delivered by the carrier.

AMECO PUBLICATIONS (AME)

4-01 Code Course Instruction Booklet	$ 1.50	
6-01 Mastering the Morse Code	2.50	
12-01 General Class FCC Test Manual	5.95	
16-01 Advanced Class License Guide	2.50	
17-01 Extra Class FCC Test Manual	5.95	
23-01 Novice Theory Course	6.95	
26-01 Advanced Class FCC Test Manual	5.95	
27-01 Novice Class FCC Test Manual	5.95	
28-01 Technician Class FCC Test Manual	5.95	
78-01 Codeless Technician FCC Test Manual	9.95	
102-01 Amateur Radio Theory Course	7.95	
EN-1 Novice Class Exam	1.95	

CODE COURSES - CASSETTE TAPES

100-T Junior code tape, 0-71/2 wpm	$ 5.95	
101-T Senior code tapes, 0-18 wpm	10.95	
103-T Advanced code tape, 8-18 wpm	5.95	
104-T Extra Class code tape, 20 wpm	5.95	
105-QT General Class QSO code course tape	5.95	
106-QT Extra Class QSO code course tape	5.95	
107-PC Morse Code Course for IBM	19.95	
NP-1 Novice Code & Theory Course	10.95	

CODE PRACTICE OSCILLATORS & CODE KEYS

OCM-2K Code oscillator & CW monitor kit	$ 19.95	
OCM-2W Wired oscillator & CW monitor	24.95	
K-1 Bakelite type key	5.95	
K-4 Brass type key	10.95	

PREAMPLIFIERS

TPA Tunable preamp & indoor active ant	$ 76.95	69.95
P-9T Power supply for TPA	9.50	
PT-3 2-54 MHz transceiver preamp	124.95	119.95
P-12T Power supply for PT-3	9.95	

MULTIMETER

M-300 20K ohms/volt multimeter	$ 19.95	

FILTERS

HP-75T 75 ohm high-pass filter	$ 12.95	
HP-300T 300 ohm high-pass filter	12.95	

AMERITRON (AMR)

AL-80A 1kw PEP out linear (3-500Z) .....Dm	1095.00	989.95
AL-80B 1kw PEP out linear (3-500Z)	1195.00	1069
AL-82 1.5kw PEP out linear (2 3-500Zs)	1995.00	1679
AL-811 600w PEP out linear (3 811As)	649.00	589.95
AL-811H 800w PEP out linear (4 811As)	795.00	719.95
AL-1200 1.5kw PEP out linear (3CX-1200A7)	2095.00	1749
AL-1500 Linear amplifier (8877)	2625.00	2199
ATR-15 1.5kw antenna tuner	399.00	359.95
ICP-120 120v inrush protector	79.00	
ICP-240 240v inrush protector	79.00	
QSK-5 Stand alone T/R switch	349.00	319.95
QSK-5PC PC board kit; T/R switch	249.00	229.95
CF-5 Cooling fan for QSK-5	39.95	
RCS-4 4-pos wireless remote coax switch	134.50	124.95
RCS-8V 160-2m 5-pos remote coax switch	149.00	139.95

Note: RCS-8V requires 8-wire control cable.

AMSOFT (AMS)

World of Ham Radio IBM shareware	$ 79.95	

ANLI (ANL)

AL-800 2m/440 BNC rubber duck antenna	$ 36.90	

Antenna Specialists (ASP)

VHF/UHF ANTENNAS

AP-143 2m 3db on glass cellular look-alike ant	$ 68.25	59.95
APR151.3 2m 3db on glass antenna	51.75	46.95
AP220.3G 220 3db on glass antenna	51.75	46.95
AP-453 440 on glass cellular look-alike ant	68.25	59.95
APR450.5G 440 5db on glass antenna	57.25	52.95

ASP - continued

	Reg	Sale
KAV-382 On glass replacement mtg kit	8.75	
ASPC201L 108-512 MHz ¼ wv ⅜ " hole ant	24.00	
ASPS748 Disguise cowl mt 2m 2.5db ant ..Δmf	90.25	49.95
ASPS619 AM/FM coupler .....Δmwf	37.00	14.95

HOLE PLUGS

ASC-34 For 1 5/16" hole	$ 3.15	
ASC-35 For ¾" hole	2.10	
ASC-37 For ⅜" hole	2.10	
ASC-39 For ⅞" hole	2.10	

Antenna Supermarket (ANT)

Eavesdropper* 60-11m trap dipole SWL ant	$ 79.95	
*Specify **SO-239** or **twin**-lead		
SWL Sloper 120-11m SWL antenna	79.95	

ARTSCI (ART)

Amateur Handbook	$ 14.95	
Lost Users Manuals	19.95	
Radio/Tech Modifications **#4**	19.95	
Radio/Tech Modifications **#5A**	19.95	
Radio/Tech Modifications **#5B**	19.95	
US Repeater Guide	9.95	

ASTATIC (AST)

10DA-L Dynamic mic head (no stand or cable)	$ 63.50	49.95
D-104-L Crystal mic head (no stand or cable)	44.00	39.95
T-UG9 Amplified desk stand	50.00	49.95
T-UG/T-UG9-D104 Amp mic, 6-wire w/stand	95.00	89.95
MC-320 Crystal mic cartridge for D-104	19.01	
MC-321 Ceramic mic cartridge for D-104	19.01	

ASTRON (ASR)

RS-7A 5A power supply, 7A surge	$ 68.95	59.95
RS-10A 7.5A power supply, 10A surge	85.95	69.95
RS-12A 9A power supply, 12A surge	99.95	79.95
RS-20A 16A power supply, 20A surge	121.95	99.95
RS-35A 25A power supply, 35A surge	197.95	149.95
RS-50A 37A power supply, 50A surge	285.95	219.95
RS-20M 16A ps w/meter, 20A surge	144.95	119.95
RS-35M 25A ps w/meter, 35A surge	204.95	169.95
RS-50M 37A ps w/meter, 50A surge	314.95	239.95
VS-20M Variable 16A ps/meters, 20A surge	170.95	139.95
VS-35M Variable 25A ps/meters, 35A surge	238.95	189.95
VS-50M Variable 37A ps/meters, 50A surge	330.95	259.95
RM-35M 25A rack mt ps/meters, 35A surge	318.95	249.95
RM-50M 37A rack mt ps/meters, 50A surge	354.95	279.95
RM-60M 50A rack mt ps/meters, 55A surge	467.95	359.95
12/115 200w solid state 12vdc-115vac inverter	79.95	59.95
2412 9A 22-32vdc to 13.8vdc converter	82.95	69.95
2412-20 16A 22-32vdc to 13.8vdc converter	146.95	109.95

AZIMUTH (AZI)

CC-2/7826 Cig lighter cord; TWR-3 .....Dmw	$ 7.75	4.95
DKS-22/7294 Stainless desk stand; TWR-3 Dmw	9.95	6.95
ALT-6/7106 Star Master WX computer ...Dmw	299.95	199.95
BP-3/7826 Nicads (3 AAA); 2 needed ..... Dm	7.95	6.95
CA-2/7192 Vinyl carrying case .....Dm	12.95	9.95
DSK/7194 Stainless desk stand .....Dm	15.95	9.95
PS-12/7822 AC power adapter/charger Dmf	9.95	7.95
PER-2/7400 Perception II indoor WX unit ...	179.95	169.95
RG-3 Rain collector, self dumping .....Dm	49.95	39.95
WIZ-2/7420 Wizard II weather station	259.95	239.95
MON-2/7440 Monitor II weather station	399.95	369.95
CC-3/7873 Cig lighter power cord	9.95	
EC-40-4/7876 4-cond 40' extension cable	17.95	
EC-40-6/7878 6-cond 40' extension cable	22.95	
EJ-25/7880 25' junction box cable	15.95	
EJ-50/7881 50' junction box cable	26.95	
EJ-100/7882 100' junction box cable	49.95	
HUMD/7858 External humid & temp sensor	79.95	
LINK/7862 Weatherstar - PC interface	169.95	
MDPT/7870 Modem adapter	6.95	
RG-4/7851 Rain collector, self dumping	49.95	
AAS WAS/WAC QSL library	19.95	
ADX DXCC QSL library	19.95	
ALG Standard QSL library w/20 pages	19.95	
AWZ WAZ QSL library	19.95	
AEP Extra 20 pages for QSL libraries	12.95	
ARS-2 World RadioSphere acrylic globe	99.95	
GC-24 Large (1¾" digits) LCD 24-hour clock	29.95	

B & K (B&K)

AUDIO TEST INSTRUMENTS

	Reg	Sale
2005A RF generator	$265.00	224.95
2009 MTS TV-stereo generator	399.00	339.95

CAPACITANCE METERS

810A 200 pF to 20 mF capacitance meter	$149.00	126.95
815 Tester (cap/res/Hfe/diode/batt)	115.00	96.95
820 .1pF to 1F capacitance meter	259.00	219.95
830 200 pF to 200mF autoranging meter	319.00	269.95
875A Digital LCR meter	199.00	169.95
878 Universal hand-held LCR bridge	275.00	229.95

COUNTERS

1803B 100 MHz frequency counter	$209.00	179.95
1804A 550 MHz frequency counter	299.00	249.95
1805 80 MHz multi-function counter	360.00	309.95
1823 175 MHz universal counter	399.00	339.95
1856 1.3 GHz frequency counter	499.00	419.95

CRT RESTORER/ANALYZERS

480 CRT restorer/analyzer	$669.00	566.95
490 Tri Dynamic restorer/analyzer	975.00	819.95

DIGITAL PRODUCTS

DP-21 Digital logic probe	$ 34.00	29.95
DP-31 Digital pulser probe	39.00	34.95
DP-51 Digital probe	90.00	76.95
DP-101 Digital pulsing probe	111.00	94.95

GENERATORS

3001 Audio generator	$ 79.00	66.95
3011B 2 MHz function generator w/dig disp	269.00	226.95
3017A 2 MHz sweep/function generator	339.00	286.95
3022 Sweep/func generator w/freq counter	479.00	399.95
3026 5 MHz sweep/function gen w/dig disp	619.00	519.95
3030 .001 Hz-5 MHz sweep/function gen ....D	865.00	729.95
3040 Universal func gen w/freq counter	1195.00	999.95
3300 5 MHz pulse generator	509.00	429.95

HIGH VOLTAGE PROBE

HV-44 Direct-reading 40kV DC probe	$ 99.00	84.95

ISOLATION TRANSFORMER

TR-110 Isolation transformer	$184.00	156.95

MULTIMETERS (ANALOG)

114 20,000 ohms/volt analog multimeter	$ 41.00	36.95
117 Pocket size analog multitester	13.00	
214 50,000 ohms/volt analog multimeter	55.00	46.95
PR-21 Test probe assembly for 290 .....Δm	41.00	29.95
PR-23 Demodulator probe for 277/290 ....Dm	30.00	22.95

MULTIMETERS (DIGITAL)

340A 300A multi-function clamp-meter	$105.00	89.95
350A 1000A multi-function clamp-meter	135.00	114.95
377 Compact 0.5% Test Bench Jr. .....D	99.00	84.95
388A Test Bench DMM, 0.5% accuracy	119.00	104.95
388HD Test Bench 41-range 3½ dig DMM ....D	129.00	109.95
389 Test Bench DMM, 0.25% accuracy	139.00	119.95
390 Test Bench DMM, 0.1% accuracy	159.00	134.95
391 Test Bench DMM, 0.05% accuracy	179.00	149.95
2701 3½-dig autoranging dig multimeter	59.00	49.95
2703 3½-dig 0.8% compact multimeter .....D	44.00	39.95
2703A Tool kit DMM, basic model, 0.5%	39.00	34.95
2704 3½-dig 0.5% compact multimeter .....D	65.00	56.95
2704A Tool kit DMM w/cap/transistor/diode	59.00	49.95
2706 Tool kit DMM, 2704A plus temperature	79.00	69.95
2707 Tool kit DMM, 2704A plus logic & freq	89.00	76.95
2802B 3½-dig probe type multimeter	64.00	54.95
2831A Digital bench multimeter	299.00	249.95
2832 3½-dig 0.5% lab multimeter	199.00	169.95
2833 4½-dig 0.05% true RMS multimeter	369.00	309.95
2860 3½-dig 0.5% ruggedized DMM	99.00	84.95
2905 3½-dig 0.5% capacitance multimeter D	79.00	69.95
2906 3½-dig 0.25% temp & logic meter .....D	99.00	84.95
2907 3½-dig 0.1% true RMS, cap, logic .....D	195.00	164.95
2911 3¾ -dig 0.5% analog/bargraph meter D	89.00	76.95
2912 3¾-dig 0.3% analog/bargraph meter .D	149.00	126.95
2940 4½-dig 0.05% data hold, freq DMM ...D	160.00	136.95
2945 4½-dig 0.05% true RMS, temp data .....D	259.00	219.95
CP-1 AC current clamp-on probe	65.00	54.95

OSCILLOSCOPES

1422 20 MHz mini scope	1395.00	1189
1443 40 MHz port scope/batt/case	1695.00	1439
1541B 40 MHz 6" dual trace scope	845.00	719.95
2120 20 MHz dual trace oscilloscope	549.00	469.95

B & K - continued

	Reg	Sale
2125 20 MHz dual time base oscilloscope	646.00	549.95
2160 60 MHz dual trace delayed sweep	1099.00	929.95
2190 100 MHz three trace delayed sweep	1645.00	1399
2522 Digital storage oscilloscope .....D	1050.00	889.95
2522A Digital storage oscilloscope	1099.00	929.95
2610 Portable spectrum analyzer	2995.00	2549

POWER SUPPLIES

1604 Portable isolated AC supply	$ 99.00	84.95
1610 0-30V, 0-1A power supply	229.00	189.95
1611 0-50V, 0-2A power supply	309.00	259.95
1630 0-30V, 0-3A power supply	315.00	269.95
1635 0-30V, 0-3A digital supply	380.00	329.95
1646 0-16V, 0-10A power supply	499.00	349.95
1651 Power supply; (2) 0-24vdc, .5A; 5V, 4A	429.00	359.95
1653 0-150V, 2A isolated AC ps	279.00	236.95
1655 0-150V, 3A isolated AC ps/leak tester	489.00	409.95
1660 (2) 0-30V, 2A; (1) 4-6.5V, 5A ps	649.00	549.95
1686 High current DC power supply	199.00	169.95

SEMICONDUCTOR TESTERS

510 Portable transistor tester	$225.00	189.95
520B Industrial transistor tester	389.00	329.95
530 Lab quality semiconductor tester	689.00	579.95
540 Component tester	1150.00	969.95
541 Component comparator	430.00	369.95
545 Circuit analyzer analog signature	2950.00	2499
560A Programmable PC board tester	3500.00	2969
AK-560A Software package for 560A	495.00	399.95

TELEPHONE TEST INSTRUMENTS

1042 Telephone line analyzer .....D	$ 27.00	22.95
1045A Telephone product tester	599.00	499.95
1050 Telephone product analyzer	2260.00	1899

THERMOMETERS

900 Probe type digital thermometer	$ 59.00	49.95
920 K-type dual input dig temp meter	80.00	69.95

VIDEO TEST INSTRUMENTS

1201SR TV converter/modulator .....D	$395.00	329.95
1211C Portable color generator	235.00	199.95
1221 Portable NTSC video generator	369.00	309.95
1249A NTSC generator w/RGB	558.00	469.95
1251 NTSC signal generator	1195.00	999.95
1260 Deluxe NTSC signal generator	1995.00	1699

ACCESSORIES

PR-28 HV multimeter probe w/std dual banana	$ 43.00	36.95
PR-32 RF detector/demod scope probe w/BNC	44.00	37.95
PR-37G Gray dlx 10:1 direct BNC scope probe	54.50	46.95
PR-37R Red dlx 10:1 direct BNC scope probe	54.50	46.95

Other accs available on special order. B & K stocked only at Milwaukee. Call Ron Glisch for B & K.

B & W COAX SWITCHES (B&W)

CSA-6G 6-position, rear connectors	$ 51.50	49.95
CSR-5G 5-position, side connectors	51.50	49.95
CS-3G 3-position, for desk/wall mounting	40.50	39.95
CS-6G 6-position, for desk/wall mounting	51.50	49.95

Note: Above switches provide grounding of unused terminals, & are supplied w/face plates & knobs.

CR-115 Coax ant relay - 48 to 130vac	42.50	39.95

LOW-PASS FILTERS

FL-10/100 1.5-30 MHz, 100w, 52 ohms	$ 32.75	
FL-10/1500 1.5-30 MHz, 1kw, 52 ohms	41.50	
FL-10/1500/70 1.5-30 MHz, 1kw, 72 ohms .†	55.00	49.95
FL-6/100 6 meters, 100w, 52 ohms	38.50	
FL-6/1500 6 meters, 1000w, 52 ohms	55.00	

DUMMY LOAD

384 1500w dummy load only w/type N .....Dm	$221.75	119.95

ANTENNAS

AP-10 57" portable 40/20/15/10/6/2m ant	$ 69.95	
AT-55 40/20/15/10m 55' trap antenna	79.95	74.95
AT-55K As above, but kit	69.50	64.95
AT-110 80/40/20/15/10m 110' trap antenna	89.50	84.95
AT-110K As above, but kit	76.95	72.95
AS-160 160/80/40/20m 137' trap dipole	149.50	139.95
AS-80 80/40/20m 78' trap dipole	115.75	109.95
AS-40 40/20/15/10m 40' trap dipole	149.50	139.95
AS-20 20/15/10m 23' trap dipole	115.75	109.95
AXS-160 160/30m 96' trap dipole	115.75	109.95
AXS-80 80/40/15m 64' trap dipole	115.75	109.95

B & W - continued

	Reg	Sale
AC-3.5-30 80-10m 8-band 90' dipole	198.00	179.95
AC-1.8-30 Continuous 1.8-30 MHz antenna	198.00	179.95
BWD-1.8-30 1.8-30 MHz 90' folded dipole	198.00	179.95
AV-25 80/40/30/20/15/10m vert, 25' high	143.50	129.95
AR-25 Radial kit for AV-25	26.95	
ASW-5 75" portable 49-11m SWL ant ..Δmfv	52.25	29.95
AT-200 2m ant matcher for reg car ant	40.90	39.95
VS-300A 300w 160-10m antenna tuner	111.00	99.95

BELDEN (BEL)

52 OHM COAXIAL CABLE

9201 RG-58 (solid center) ....per ft.			20¢
9201 ....100 ft. Roll	29.74	18.95
9201 ....500 ft. Roll	109.89	69.95
9201 ....1000 ft. Roll	216.45	129.95
8240 RG-58U (solid center) ....per ft.			26¢
8240 ....100 ft. Roll	38.20	24.95
8240 ....500 ft. Roll	131.00	89.95
8240 ....1000 ft. Roll	262.00	169.95
8259 RG-58AU (stranded center) ....per ft.			29¢
8259 ....100 ft. Roll	43.00	26.95
8259 ....500 ft. Roll	137.00	89.95
8259 ....1000 ft. Roll	276.00	169.95
8219 RG-58AU (stranded, foam) ....per ft.			33¢
8219 ....100 ft. Roll	57.25	29.95
8219 ....500 ft. Roll	155.00	99.95
8219 ....1000 ft. Roll	387.50	189.95
8262 RG-58C (non-contaminating) ....per ft.			36¢
8262 ....100 ft. cut			32.95
8262 ....500 ft. Roll	173.00	119.95
8262 ....1000 ft. Roll	346.00	219.95
9258 RG-8X (stranded, foam) ....per ft.			36¢
9258 ....100 ft. Roll	81.25	32.95
9258 ....500 ft. Roll	217.56	99.95
9258 ....1000 ft. Roll	490.00	189.95
8237 RG-8U ....per ft.			64¢
8237 ....100 ft. Roll	102.00	59.95
8237 ....500 ft. Roll	390.00	239.95
8214 RG-8U (foam) ....per ft.			59¢
8214 ....100 ft. Roll	101.00	49.95
8214 ....500 ft. Roll	452.00	229.95
8214 ....(Truck) 1000 ft. Roll	898.00	429.95
9913 RG-8U (low loss) ....100 ft. Roll	113.00	59.95
9913 ....250 ft. Roll	244.00	129.95
9913 ....500 ft. Roll	486.00	229.95
9251 RG-8A (non-contaminating) ....per ft.			87¢
9251 ....100 ft. Roll	132.09	77.95
9251 ....500 ft. Roll	492.84	299.95
8267 RG-213 (non-contaminating) ....per ft.			76¢
8267 ....100 ft. cut			66.95
8267 ....500 ft. Roll	597.18	279.95

72 OHM COAXIAL CABLE

8241 RG-59U (72 ohm, solid center) ....per ft.			28¢
8241 ....100 ft. Roll	44.00	24.95
8241 ....500 ft. Roll	123.00	79.95
8241 ....1000 ft. Roll	246.00	149.95
8238 RG-11 (72 ohm, stranded center) per ft.			79¢
8238 ....100 ft. Roll	124.32	69.95
8238 ....500 ft. Roll	470.64	279.95
8213 RG-11 (72 ohm, solid, foam) ....per ft.			69¢
8213 ....100 ft. cut			59.95
8213 ....500 ft. Roll	360.00	239.95

ROTOR CABLE

8484 4-wire; U-105/U-110 ....per ft.			28¢
8484 ....100 ft. Roll	48.00	24.95
8484 ....500 ft. Roll	185.00	99.95
8484 ....1000 ft. Roll	370.00	189.95
8485 5-wire; AR-40 ....per ft.			32¢
8485 ....100 ft. Roll	60.00	29.95
8485 ....500 ft. Roll	231.25	119.95
8485 ....1000 ft. Roll	462.50	229.95
8448 8-wire; HD-73/CD-45/HAM-IV ....per ft.			46¢
8448 ....100 ft. Roll	103.75	42.95
8448 ....500 ft. Roll	412.50	159.95
8448 ....1000 ft. Roll	820.00	319.95
9405 8-wire; HAM-IV/T²X/HDR-300 ....per ft.			59¢

BELDEN - continued

	Reg	Sale
9405 ....100 ft. cut		54.95
9405 ....500 ft. Roll	585.00	249.95
9405 ....(Truck) 1000 ft. Roll	1167.50	489.95

ANTENNA WIRE

8000 No. 14 stranded ant wire ....per ft.			20¢
8000 ....100 ft. Roll	30.50	16.95
8000 ....1000 ft. Roll	275.00	149.95

No. 8 ALUMINUM GROUND WIRE

8018 Multiples of **50** ft. ....each	$ 19.00	10.95
8018 ....500 ft. Roll	150.00	79.95

Note: All above roll pricing is for rolls as shown only; all other lengths, even if more than roll length shown or a multiple of roll length shown, are sold at the per ft. price only.

COILED MICROPHONE CABLE

8497 1 shielded, 2 unshielded (rubber)	$ 16.25	

FOAM COAX w/PL-259s ON BOTH ENDS

9349 3' RG-58AU foam	$ 19.32	14.95
9350 15' RG-58AU foam	21.63	16.95
9347 20' RG-58AU foam, 1 PL-259	19.32	14.95
9352 50' RG-58AU foam	32.13	24.95
9354 50' RG-8U foam	60.90	44.95
9355 75' RG-8U foam	84.00	59.95
9356 100' RG-8U foam	101.85	79.95

Also see JSC for cable

BELMERIT (BLM)

DM-10S 3½-digit digital multimeter	$ 19.95	
DM-90 Pencil-type dig multimeter/logic tester	39.95	
DM-3000 Wide range digital multimeter	49.95	
DM-3050 Wide range dig multimeter/freq test	59.95	

BENCHER (BEN)

BY-1 Iambic keyer paddle w/black base	$ 72.95	69.95
BY-2 Iambic keyer paddle w/chrome base	89.95	84.95
BY-3 Iambic keyer paddle, gold plated	250.00	219.95
ST-1 Single lever keyer paddle, black base	72.95	69.95
ST-2 Single lever keyer paddle, chrome base	89.95	84.95
ST-3 Single lever keyer paddle, gold plated	250.00	219.95
ZA-1A 3.5-30 MHz 1:1 balun	34.95	
HWK Balun hardware kit for 2" boom	8.95	
YA-1 1kw low pass filter	49.95	

BIRD (BIR)

43 Thruline Directional wattmeter, SO-239s	$215.00	
4300-400 Peak reading conversion kit	107.00	
43P Peak reading directional meter, SO-239s	325.00	
4431 Wattmeter, variable RF tap, SO-239s	383.00	
Elements (Table 1) **50H-1000H** ....each	72.00	
Elements (Table 1) **2500H, 5000H** ....each	103.00	
Elements (Table 1) 25-1000 MHz ....each	58.00	
Low-power elements (Table 2) ....each	78.00	

TABLE 1 Standard Elements

Power Range	2-30	25-60	50-125	100-250	200-500	400 1000
	Frequency Bands (MHz)					
5 watts	—	5A	5B	5C	5D	5E
10 watts	—	10A	10B	10C	10D	10E
25 watts	—	25A	25B	25C	25D	25E
50 watts	50H	50A	50B	50C	50D	50E
100 watts	100H	100A	100B	100C	100D	100E
250 watts	250H	250A	250B	250C	250D	250E
500 watts	500H	500A	500B	500C	500D	500E
1000 watts	1000H	1000A	1000B	1000C	1000D	1000E
2500 watts	2500H					
5000 watts	5000H					

TABLE 2 Low-Power Elements

1 watt	Cat. No.	2.5 watts	Cat. No.
60-80 MHz	060-1	60-80 MHz	060-2
80-95 MHz	080-1	80-95 MHz	080-2
95-125MHz	095-1	95-125MHz	095-2
110-160MHz	110-1	150-250MHz	150-2
150-250MHz	150-1	200-300MHz	200-2
200-300MHz	200-1	250-450MHz	250-2
275-450MHz	275-1	400-850MHz	400-2
425-850MHz	425-1	800-950MHz	800-2

CC-1 Carying case	39.00	
EC-1 Element case	30.00	
80F 5w dummy load w/type N female	66.00	
80M 5w dummy load w/type N male	66.00	

BIRD - continued

	Reg	Sale
8080 25w dummy load w/type N male QC	93.00	
8085 50w dummy load w/type N male QC	132.00	
4273 1.5-35 MHz variable RF sig sampler*	110.00	
4273-100 For Bird equipment installation	121.00	
4275 20-1000 MHz variable RF sampler*	108.00	
4275-100 For Bird equipment installation	122.00	
4304A 25-1000 MHz 500w wattmeter	445.00	

*2 QC connectors required - not included

QUICK CHANGE CONNECTORS (QC)

4240-050 UHF female (SO-239) ....each	$ 8.00	
4240-179 UHF male (PL-259) ....each	39.00	
4240-062 Type N female ....each	8.00	×2
4240-063 Type N male ....each	16.00	
4240-125 BNC female ....each	16.00	
4240-132 BNC male ....each	47.00	
4100-014 Type N female SQC (small) ....Δm	14.00	4.95

Other Bird items available on special order

BUCKMASTER (BUC)

HamCall CD-ROM ham listings; IBM/Mac	$ 50.00	

BUTTERNUT (BUT)

HF-6VX 80/40/20/15/10m 26' vert ant		169.95
A17-12 17 & 12m kit for HF-6VX		44.95
MPS Mounting post sleeve		9.95
RMK-II Roof mounting kit w/radials		69.95
STR-II Radial kit only		44.95
TBR-160S 160m resonator		69.95
HF-2V 80/40m 32' vertical		159.95
30-MRK 30m resonator for HF-2V		44.95
TBR-160S 160m resonator		69.95
HF-5B 2 el 20/17/15/12/10m butterfly beam		259.95
10-11 2 el butterfly beam for 10 & 11m		119.95
2MCV 2m ⅜ wave 3 db vertical ant ...Δmwfcv		39.95
2MCV-5 2m ⅝ wave 5 db vertical ant Δmwcv		49.95

CES (CES)

410 Personal Patch interconnect	$250.00	189.95
SSI-68 Simplex autopatch	460.00	299.95
SDI-50 Dlx splx/dplx autopatch/rptr controller	760.00	489.95

CAMBRIDGE (CAM)

The Art of Electronics (book)	$ 49.50	

CIRCUIT WORKS (CIR)

Conductive Pen	$ 10.95	

CLOCKS

AEA **World Clock**	$ 25.00	
AZI **GC-24** 1¾" digits LCD 24-hour clock	29.95	
BMI **972A** 12" 12-hour wall clock	37.95	
BMI **972AD** 14" 12/24-hour wall clock	39.95	
BMI **973A** 12" 24-hour wall clock	59.95	49.95
MFJ **107B** 24-hour digital clock	9.95	
MFJ **108B** 24/12-hour dual disp digital clock	19.95	
MFJ **109** World time clock ....Dmwf	19.95	12.95
MFJ **110** DX'ers world time clock ....D	24.95	
MFJ **112** Deluxe world map clock	24.95	
World Clock **M-3111A(S)** 12/24-hr smoke/silver ..Dv	36.95	9.95
World Clock **M-8201(G)** 12/24-hr gold ....Dv	34.95	9.95

COAX SEAL (UNV)

104 ½" x 60" coax seal	$ 2.49	

COMET (CMT)

MOBILE ANTENNAS

B-10 2m/440 2.15db 12" cell look-alike ant	$ 38.95	
B-10NMO 2m/440 2.15db 12" cell look-alike NMO	38.95	
B-20 2m/440 2.15/5db 30" cell look-alike ant	54.95	49.95
B-20NMO 2m/440 2.15db/5db 30" cell look NMO	54.95	49.95
CA-2x4MB 2m/440 4.5/7db 5' mobile ant	79.95	72.95
CA-2x4SR 2m/440 3.8/6.2db 3' 4" mobile	62.95	56.95
CA-28HR 10m 7' fold-over mobile ant	69.95	64.95

MasterCard VISA DISCOVER Use your CREDIT CARD AMERICAN EXPRESS

COMET - continued

	Reg	Sale
CA-220JR 220 3.4db 2' 9" fold-over ant	35.25	
CA-220MR 220 4.2db 3' 3" fold-over ant	44.75	
CA-430HG 440 5db 2' 5" mobile antenna	44.95	
CA-1204 1.2GHz 8.4db 2' 8" fg type N ant ..D	65.50	59.95
CA-2405 2.4 GHz 7db 17" fg type N antenna	50.95	
CA-HV 40/15/10/6/2m 5' 10" mobile ant	125.95	112.95
L-14 20m loading coil for CA-HV	29.00	
CHL-21J 2m/440 0/2.15db 12" mobile ant	29.95	
CHL-23J 2m/440 2.15/3.8db 20" mobile	34.95	
CHL-185 2m 4.1db 4' 8" mobile ant	49.95	
CHL-350 10/6m 0/2.15db fold-over 7' ant	71.50	64.95
CMW-202N 900 MHz 5.1db 18" type N ant	34.55	
CSR-12S 1.2GHz 6.8db 20" mobile type N ...D	43.00	
CSR-024 440/1.2 GHz 4.1/6.8db 22" type N D	38.75	
CX-224 2m/220/440 2.15/3.2/5.5db 42" mobile	79.95	74.95
CX-224NMO 2m/220/440 2.15/3.2/5.5db 42" NMO	79.95	74.95
CX-702 6/2m/440 2.15/6/8.4db 6' 10" ant	97.95	89.95
CX-801 2m/440/1.2 3/6.8/9.6db 39" type N	84.95	79.95
CX-802 2m/440/1.2 2.8/6/8.4db 29" N ....Dmf	68.00	49.95
CX-809P 2m/440/cell 3/6/8.4db 2'11" fold-over	72.95	66.95
FL-62S 2m/440 3.5/6.2db 3' 5" mobile ant	79.95	74.95
FL-67S 2m/440 4.5/7.2db 4' 11" mobile	96.95	89.95
FL-95SN 2m/440/1.2 2.8/6/8.4db type N	79.95	74.95
FS-92B 2m/440/1.2 2.1/4.1/6.8 23" type N	79.95	74.95
NCG-1422M 2m/220 2.15/3.4db 3' mobile	66.95	62.95
WP-57 2m/440 2.15/5.2db on glass 27" ant	129.95	109.95
WP-75B 440/1.2 4.9/6.5db on glass BNC ant	144.95	124.95
WP-75N 440/1.2 4.9/6.5db on glass type N	144.95	124.95

MOBILE MOUNTS, ETC

3D4M Mobile mount w/UHF connectors	$ 22.95	
3D4N Mobile mount w/type N	23.95	
5D4N Roof mount w/type N	29.95	
AD-10N N-NMO mount adapter	17.95	
AD-15M UHF-NMO mount adapter	17.95	
BMG-BB Med duty black mag mt, BNC/BNC	39.95	
BMG-M Med duty black mag mt w/UHF conn	39.95	
CA-MS1 Mag mt only, no coax; add 3D4M, etc	24.95	
CK-5M Dlx cable assembly w/UHF connectors	37.95	
CK-5N Dlx cable assembly w/type N	39.50	
MG-SRB Med duty mag mt w/UHF/BNC	37.25	
MG-SRM Med duty mag mt w/UHF connectors	35.25	
MS-3FVMM Std duty mag mt w/UHF connectors	39.95	
MS-3FVNN Std duty mag mount w/type N	42.95	
MS-5LXMM Hvy duty mag mt w/UHF connectors	56.95	
MS-5LXNN Hvy duty magnet mount w/type N	59.90	54.95
RS-9 Trunk lip mount, no coax	12.75	
RS-20 Gtr mt for small/med ants, no coax	29.95	
RS-21 Adj 360 degree hatch/tnk mt, no coax	29.95	
RS-25 Adj pipe clamp mount, no coax	31.95	
RS-80 Adjustable gutter mount, no coax	29.95	
RS-81 Adj trunk/hatch mount, no coax	29.95	
TS-1M Trunk lip mt w coax	43.95	
TS-103MM Trunk lip mt w/coax ....D	37.90	
TS-103NN Trunk lip mt w/coax, type N	39.35	
TS-106NN Dlx trunk lip mt w/coax, type N	55.95	
5D-FB Low loss 7.3mm (¼") coax ...300m roll	183.85	159.95
5D-NPC Male N connector for 5D coax	7.95	
5D-NJC Female N connector for 5D coax	7.95	
5D-MPC Male UHF (PL-259) for 5D coax	7.95	
5D-BNC Male BNC connector for 5D coax	9.95	
10D-FB Low loss 13.1mm (½") coax 100m roll	426.00	379.95
10D-NPC Male N connector for 10D coax	9.95	
10D-NJC Female N connector for 10D coax	9.95	
10D-MPC Male UHF (PL-259) for 10D coax	9.95	

BASE STATION ANTENNAS

CA-2x4FX 2m/440 4.5/7.2db 5' 11" base ant	$121.25	109.95
CA-2x4MAX 2m/440 8.5/11.9db 17' 8" ant	219.95	189.95
CA-2x4WX 2m/440 6.5/9db 10' 2" base ant	174.95	154.95
CA-2x4Z 2m/440 8.2/11.5db 15' 11" type N	209.95	189.95
CA-62DB 52-54MHz 6.5db 21.75' base ant	135.95	116.95
CA-350DB 10/6m 2.15/6.5db 22' 7" ant	289.95	259.95
CA-712EF 440 9db 10' 5" base antenna	125.00	112.95
CA-1218G 1.2GHz 12db 7.75' hvy duty N	145.00	129.95
CA-1221S 1.2GHz 14.8db 8.5' type N base	164.95	149.95
CA-1243E 440/1.2 GHz 6/8.4db 3' 4" type N	92.95	82.95
CA-1243Z 440/1.2 GHz 9.4/12.8db 7' type N	157.95	142.95
CA-2422S 2.4GHz 15.3db 4' 8" type N base	180.85	159.95
CA-ABC23 2m 7.8 db 13' 4" base antenna	129.25	114.95
CA-F22GF 136-175 6db 8' 10" tunable .....T	141.95	124.95
CA-F72GF 440-470 6db 3' 6" tunable ant	119.25	106.95

COMET - continued

	Reg	Sale
CA-Super22 220 6.6db 5' 11" base ant	135.00	119.95
CMR-241 2m/440 4.5/7.2db 6.5' base ant	169.95	149.95
CMR-1215 1.2GHz 11db 6.6' type N ant	229.95	209.95
CX-725 6/2m/440 2.15/6.2/8.4db 7.5' base	159.95	139.95
CX-902 2m/440/1.2 6.5/9/9db 10' type N	179.00	159.95
CX-903 2m/440/1.2 6.5/9/13.5db 9' 4" N	229.95	209.95
CYA-1216E 1.2GHz 16el 16.6db 4' 5" N beam	135.95	122.95
FP-19 900 MHz 16db 7' 4" type N antenna	106.40	98.95
GPX-2010 2m/440 9.5/13.2db 23' 4" ant	395.95	364.95
NCG-1422B 2m/220 2.15/3.4db 3' 8" ant	119.50	109.95
PYA-913 900MHz 13el 15.8db 4' 8" type N beam	139.25	124.95

DUPLEXERS AND TRIPLEXERS

CF-350 30 MHz/6m UHF w/leads	$ 52.25	49.95
CF-413A 440/1.2 500/200w N w/leads	68.10	62.95
CF-413B 440/1.2 500/200w N/UHF/N leads	68.10	62.95
CF-416A 2m/440 800/500w UHF w/leads	58.70	52.95
CF-416C 2m/440 800/500w N/UHF/N leads	58.70	52.95
CF-520 6m/140-470 MHz UHF w/leads	57.95	52.95
CF-4130A 440/1.2 500/200w N, no leads	69.00	62.95
CF-4160I 2m/440 800/500w UHF/UHF/N, no leads	52.25	49.95
CF-4160K 2m/440 800/500w all UHF, no leads	52.25	49.95
CFX-324A 2m/220/440 600w UHF w/leads	99.95	89.95
CFX-324B 2m/220/440 600w UHF, no leads	95.00	84.95
CFX-431A 2m/440/900-1.2 N/UHF/N/N, leads	81.95	72.95
CFX-431B 2m/440/900-1.2 N/UHF/UHF/N, leads	81.95	72.95
CFX-514 HF/2m/440 800/800/500w UHF w/leads	75.95	68.95
CFX-514J HF/2m/440 800/800/500w UHF, no leads	74.95	66.95
CFX-4310B 2m/440/900-1.2 N/UHF/N/N, no leads	82.95	74.95
CFX-4310C 2m/440/1.2; Kenwood TM-741A/941A	82.95	74.95
NCG-1422D 2m/220 100w UHF w/leads	62.70	56.95

HT AND HAND-HELD SCANNER ANTENNAS

CH-32 2m/440 1.75" BNC antenna	$ 33.95	
CH-72S 2m/440 0/3.2db 15" BNC antenna	31.95	
CH-600MX 2m/440/1.2 -2/3/5.5db 14.5" TNC . D	49.95	
CH-720C 2m/440 semi-rigid 0/3.8db 18" BNC	37.95	
CH-1200WS 1.2 GHz 5.6db 13" BNC HT ant	32.95	
CH-701X 2m/440/900 2/3.4/5.5db 19" BNC	48.95	
CY-1205 1.2 GHz 11db 7" BNC HT beam	41.45	
HB-400 HT air vent dash mount	18.95	
HB-500 Remote head air vent dash mount	21.95	
SH-95 2m/440/1.2 1.5/2.15/5.5db BNC ant	49.95	

SWR/POWER METERS & MINIMETERS

CD-120 1.8-200 MHz 200w SWR/power meter	$139.95	124.95
CD-160H 1.6-60 MHz 2kw SWR/power meter	169.95	149.95
CD-270 140-525 MHz 200w SWR/power	159.95	144.95
CM-200 140-150 MHz minimeter	51.95	46.95
CM-300 220-240 MHz minimeter	51.95	46.95
CM-400 430-450 MHz minimeter	51.95	46.95
CM-400N 430-450 MHz minimeter w/type N	55.50	49.95
CM-420 140-150/430-450 MHz minimeter	75.95	69.95
CM-420N 140-150/430-450 MHz type N mini	78.95	69.95
CM-900 900-920 MHz type N minimeter	89.95	79.95
CM-1200 1240-1300 MHz type N minimeter	89.95	79.95
NCG-2000 140-525 MHz 200w SWR/power	99.95	89.95

ACCESSORIES

CS-290P 1500MHz 150w N lightning protect	$ 39.95	
CS-400P 500MHz 250w lightning protect	34.95	
CSP-30 Mini speaker w/magnet mt	29.25	
CSP-80 Mini spkr w/mag mt, noise filt, mute	36.25	
HM-50 Headrest mtg bkt for mini spkrs	16.95	
CSW-20 0-950MHz coax switch	57.60	49.95
CSW-20N 0-1300MHz type N coax switch	99.95	89.95
ML-7I Micless mic (ear mic); Ali/Ico/Sta/Yae	99.95	89.95
ML-7K Micless mic (ear mic) for Kenwood	99.95	89.95

NOTE: All Comet models stocked at Milwaukee World Headquarters. Branch stores carry items that sell well in their area.

Communications Specialists (COM)

SS-32P Programmable CTCSS encoder	$ 28.95
SS-32SMP Hybrid micro-sized encoder	27.95
TE-64 64-tone CTCSS/burst switch encoder	79.95
TS-32P 32-tone CTCSS prog encoder/decoder	57.95
DTD-1 DTMF decoder	59.95

CONNECTORS

AMPHENOL COAX CONNECTORS (AMP)

83-1SP-1050 Male coax plug (PL-259)	$ 1.84
83-1SP Silver plated coax plug (PL-259)	2.84

CONNECTORS - continued

	Reg	Sale
Gold Line (GOL) **silver plated** teflon PL-259	2.99	
83-185 Reducer for RG-58 (UG-175)	.59	
83-168 Reducer; RG-59/RG-8X (UG-176)	.66	
83-1AP Right angle adaptor (UG-646)	5.62	
83-1J Double female adaptor (PL-258)	3.23	
83-1R Female chassis mt socket (SO-239)	1.90	
83-1H Hood for in-line use (UG-106)	3.25	
83-1T T-connector adaptor (M-358)	7.99	
83-877 Double male adaptor	8.44	
83-878 Single hole (⅝") chassis mt socket	2.53	
31-002 BNC male connector for RG-58	3.32	
31-012 BNC male connector; RG-59/RG-8X	3.71	
31-221 BNC female chassis mt socket	1.94	
82-24 Type N female chassis mt socket	4.32	
82-61 Type N male connector for RG-8	7.21	
82-64 Type N right angle adaptor	19.60	
82-202-1006 Type N male; Belden 8214/9913	6.88	
82-209 Type N female in-line for RG-8	6.07	
34025 Type N male connector for RG-58	5.89	

AMPHENOL COAX ADAPTORS (AMP)

2900 SO-239 to BNC male adaptor	$ 9.13	
4400 SO-239 to type N male adaptor	12.62	
34125 Type N female to PL-259 adaptor	20.45	
45250 Type N double male adaptor	13.72	
31-28 BNC female to PL-259 adaptor	8.50	
83-10 SO-239 to Motorola/phono plug	9.19	

AIM COAX CONNECTORS & ADAPTORS (AIM)

25-7302 0-900MHz teflon insulator PL-259	$ 4.50	
25-7351 Chassis mt SO-239 double female	5.60	
25-7365 BNC female to SO-239	4.90	
25-7420 BNC male to SO-239	3.80	
26-8010 Type N double female	5.70	
26-8011 Type N chassis mount	2.70	
26-8015 N male to SO-239	7.90	
26-8016 BNC female to N male	7.90	
26-8017 BNC male to N female	7.90	
27-8110 BNC female to RCA male	5.50	
27-8120 BNC female to PL-259	3.70	
27-8130 BNC double male	4.80	
27-8140 BNC T; 2 female, 1 male	4.40	
27-8142 BNC T, 3 male	8.90	
27-8450 BNC chassis mt, 4 screw holes	3.50	
27-8460 ⅜" hole BNC chassis mt	1.90	
27-8470 Dual BNC chassis mount	5.00	
29-4140 SO-239 to mini PL-259	5.50	

SWITCHCRAFT MICROPHONE CONNECTORS (SWI)

480 .206" 3-cond mic plug (PJ-068/Collins)	$ 12.50	
S-260 .206" 3-cond mic plug (Drake)	6.65	

Switchcraft 1/4 " Plugs w/Solder Terminals (SWI)

267 3-conductor, plastic handle	$ 4.45	
237 As above, but right angle plug	5.15	
260 3-conductor w/screw terminals	5.05	
297 3-conductor, metal handle	5.35	
250 2-conductor, plastic handle	3.00	
220 As abv, w/screw terminals, rt angle plug	4.40	
280 2-conductor, metal handle	4.45	

SWITCHCRAFT PHONO-TYPE CONNECTORS (SWI)

3501MC Phono plug with cable clamps	$ .90	
3502 Shielded phono plug	1.75	
3507 RF-type phono plug	2.55	

VANCO MICROPHONE CONNECTORS (VCO)

CBC-3 3-pin female mic plug	$ 3.27	
CBC-4 4-pin female mic plug	4.04	
CBC-4P Panel mt 4-pin male	2.21	
CBC-5 5-pin female mic plug	3.87	
CBC-5P Panel mt 5-pin male	2.21	
CBC-6 6-pin female mic plug	4.06	
CBC-7 7-pin female mic plug	5.89	
CBC-8 8-pin female mic plug	5.89	
CBC-8P Panel mt 8-pin male	5.57	

KENWOOD DIN PLUGS (KEN)

7-pin DIN plug	$ 3.92	
8-pin DIN plug	4.51	
13-pin DIN plug	6.76	

VANCO MINI PHONE PLUGS (VCO)

P-25 2.5mm sub-miniature phone plug	$ .99	
P-35 3.5mm miniature phone plug	.99	
P-12V Cig lighter plug w/leads	2.91	

	Reg	Sale

Connect Systems (CSY)

CS-700 Simplex interconnect	$329.00	299.95
CS-800 Full duplex patch & repeater controller	349.00	319.95
Private Patch V Multi-mode interconnect	533.25	489.95
8200 Full duplex patch & repeater controller	550.00	529.95
CS-16 DTMF decoder/controller .....Dmfv	149.00	129.95
CS-1688 Deluxe DTMF decoder/controller	149.00	

COYNE (COY)

HAM RADIO TEST GENERATOR FOR MACINTOSH

MacHam no code **Technician**, includes Novice 2A	$ 49.95	
MacHam General	34.95	
MacHam Advanced	34.95	
MacHam Extra	34.95	

CROSS DEVICE (CRS)

STUF Coax connector waterproofing filler	$ 4.50	

CROWN METAL (CRO)

SOLID BASE COPPERWELD ANTENNA WIRE

AN-122 100 feet No. 12	$ 24.95	
AN-123 150 feet No. 12	29.95	
AN-124 250 feet No. 12	49.95	
AN-126 500 feet No. 12	84.95	
AN-128 1000 feet No. 12	154.95	139.95
AN-142 100 feet No. 14	19.95	
AN-143 150 feet No. 14	24.95	
AN-144 250 feet No. 14	29.95	
AN-146 500 feet No. 14	54.95	
AN-148 1000 feet No. 14	104.95	99.95
AN-181 250 feet No. 18	14.95	
AN-182 500 feet No. 18	24.95	

CUSHCRAFT (CUS)

VHF/UHF FM BEAMS (Vertical polarization)

A147-4 2m, 4 el, 3.5' boom, 10 db	$ 57.00	49.95
A147-11 2m, 11 el, 12' boom, 13 db	88.00	69.95
A147-20T 2m FM/SSB twist, 12 db	114.00	89.95
A147-22 2 A147-11s vert stacked, 16 db	243.00	189.95
A449-6 440 MHz, 6 el, 3' boom, 10 db	54.00	49.95
A449-11 440 MHz, 11 el, 4.5' boom, 13 db	78.00	69.95

FM VERTICAL STACKING KITS* (Adds 3 db)

A14-VPK Stacking kit for 2 A147-4s	$ 59.00	49.95
A14-SK Harness only for 2 A147-4s	44.00	39.95
A147-VPK Stacking kit for 2 A147-11s	98.00	79.95
A147-SK Harness only for 2 A147-11s	44.00	39.95
A220-VPK Stacking kit; 2 A220-11s .....Dmwf	55.00	24.95
A21-SK Harness only for 2 A220-11s .....Df	40.00	19.95
A449-VPK Stacking kit for 2 A449-6/11s	59.00	52.95
A449-SK Harness only for 2 A449-6/11s	44.00	39.95

*Prices are for stacking kits only

FM RINGOS - 1/2 Wave Verticals - 3.75 db

AR-10 10m FM Ringo, 1000w	$ 65.00	54.95
AR-6 6m FM, 1000w	65.00	54.95
AR-2 2m FM, 1000w	45.00	36.95
AR-220 220 MHz FM, 500w	45.00	36.95
AR-450 440 MHz FM, 500w	45.00	36.95
AR-270 2m/440 MHz FM, 250w, 3.7/5.5db	83.00	69.95

RINGO RANGERS - FM Verticals - 6 db

ARX-2 2m FM Ringo Ranger	$ 55.00	46.95
ARX-2B 2m FM Ringo Ranger II, 1000w	67.00	54.95
ARX-220B 220 FM Ringo Ranger II, 500w	67.00	54.95
ARX-450B 440 FM Ringo Ranger II, 500w	67.00	54.95
ARX-450BN 440 FM Ringo Ranger II w/type N	80.00	64.95

HIGH PERFORMANCE 2m/440 VERTICALS

ARX-270N 2m/440 9/12 db fg type N ant	$260.00	199.95
ARX-270U 2m/440 9/12 db fg SO-239 ant	260.00	199.95

FM 4-POLES (less vertical support mast)

AFM-4DA 2m FM, 23' high, 6/9 db	$134.00	104.95
AFM-24DA 220 MHz FM, 15' high, 6/9 db	119.00	99.95
AFM-44DA 440 MHz FM, 8' high, 6/9 db	104.00	84.95

TWIST, OSCAR BEAMS (Horiz/Vert Polarization)

A144-10T 2m, 10 el, 5' boom, 10 db	$ 98.00	79.95
A144-20T 2m, 20 el, 10' boom, 12 db	140.00	114.95
A147-20T 2m FM/SSB, 10' boom, 12 db	114.00	89.95
416TB 432 twist Boomer, 16el, 6'boom, 12db	115.00	94.95
PS-4 Remote polarity switch, needs 12vdc	142.00	109.95
A14T-MB Oscar mtg boom & bracket	47.00	42.95

CUSHCRAFT - continued

	Reg	Sale
AOP-1 Oscar pack; A144-20T/416TB/A14T-MB	285.00	219.95

BOOMER ANTENNAS

617-6B 6m Boomer, 6 el, 34' boom, 14 db	$387.00	299.95
124WB 2m Boomer, 4 el, 4' boom, 10.2 db	67.00	59.95
13B2 2m Boomer, 13 el, 15' boom, 15.8 db	135.00	109.95
17B2 2m Boomer, 17 el, 31' boom, 18 db	225.00	169.95
26B2 2 13B2s vertically stacked	370.00	289.95
4218XL 2m Boomer, 18 el, 28.8' bm, 17.2db ..Dwfv	225.00	149.95
220B 220 Boomer, 17 el, 19' boom, 17 db	175.00	139.95
224WB 220 Boomer, 4 el, 3' boom, 10.2db	64.00	54.95
225WB 220 wideband Boom, 15el, 10'bm, 15.5db	135.00	109.95
230WB 2 215WBs vert stacked, 18.5db ....Dw	375.00	229.95
416TB 432 twist Boomer, 16 el, 6' boom, 12db	115.00	94.95
PS-4 Remote polarity switch, needs 12vdc	142.00	109.95
424B 432 Boomer, 24 el, 17.5' boom, 18 db	150.00	119.95

BOOMER STACKING KITS*

617-SK Harness, pwr divider for 2 617-6Bs	$145.00	119.95
32-SK Harness, pwr divider for 2 32-19s ..Dw	90.00	49.95
324-QK Quad stacking kit for 4 32-19s .Dmfv	575.00	269.95
22-SK Harness, power divider; 2 13B2s	88.00	74.95
22N-SK Harness, pwr divider; 2 17B2s	145.00	119.95
26B2-VPK Vertical polar kit; 2 13B2s	190.00	149.95
230-VPK Vert polarity kit; 2 215WBs ....Dmwv	185.00	109.95
224-QK Quad stack kit; 4 215WBs/214Bs Dwf	390.00	199.95
220-SK Harness, power divider for 2 220Bs	88.00	74.95
220-QK Quad stacking kit for 4 220Bs ....Dwf	390.00	179.95
PD-2 Power divider for 2 13B2s	44.00	39.95
PD-2N Power divider for 2 17B2s	83.00	69.95
PD-4 Power divider for 4 13B2s	55.00	49.95
PD-4N Power divider for 4 17B2s	103.00	89.95
PD-222 Power divider for 2 220 Boomers	44.00	39.95
PD-224 Power divider for 4 220 Boomers	55.00	49.95

*Prices are for stacking kits only

VHF/UHF BEAMS (Horizontal polarization)

A50-3S 6m, 3 el, 6' boom, 8 db, stainless hdwre	$100.00	84.95
A50-5S 6m, 5 el, 12' boom, 10 db, stainless hdwre	165.00	129.95
A50-6 6m, 6 el, 20' boom, 11 db .....Dmv	250.00	129.95
A50-6S 6m, 6 el, 20' boom, 11db, stainless hdwre	268.00	199.95
A144-7 2m, 7 el, 8' boom, 10 db	54.00	49.95
A144-11 2m, 11 el, 12' boom, 11 db	88.00	74.95
A430-11 430 MHz, 11 el, 4' boom, 13 db	78.00	64.95

HORIZONTAL STACKING KITS* (Adds 3 db)

A535-SK For 2 A50-3s or 2 A50-5s	$ 44.00	39.95
A561-SK For 2 A50-6s or 2 A50-10s	57.00	49.95
A17-SK For 2 A144-7s, 79" spacing	44.00	39.95
A11-SK For 2 A144-11s, 79" spacing	44.00	39.95
A41-SK For 2 A430-11s, 26" spacing	44.00	39.95

*Prices are for stacking kits only

DX-ARRAY ACCESSORIES

DX-4BN 1:1 balun for DX-420 .....Dwv	$ 27.00	2.95

CUSHCRAFT/SIGNALS MOBILE ANTENNAS

CS-28M 10m magnet mt antenna	$ 64.00	56.95
CS-50 6m ¾" hole mt 3 db antenna	55.00	49.95
CS-50M 6m magnet mt 3 db antenna	64.00	54.95
CS-50T 6m trunk lip mt 3 db antenna	64.00	54.95
CS-1147M 2m ¼ wave magnet mt antenna	42.00	34.95
CS-147 2m ¾" hole mt 3 db antenna	55.00	49.95
CS-147M 2m magnet mt 3 db antenna	64.00	56.95
CS-147T 2m trunk lip mt 3 db antenna	64.00	56.95
CS-147A 2m coil & whip only	43.00	39.95
CS-220 220 ¾" hole mt 3 db antenna	55.00	49.95
CS-220M 220 magnet mt 3 db antenna	64.00	56.95
CS-220T 220 trunk lip mt 3 db antenna	64.00	56.95
CS-1450M 440 ¼ wave magnet mt antenna	42.00	34.95
CS-450 440 ¾" hole mt 5 db antenna	55.00	49.95
CS-450M 440 magnet mt 5 db antenna	64.00	54.95
CS-450T 440 trunk lip mt 5 db antenna	64.00	54.95
CS-450A 440 coil & whip only	43.00	38.95
CS-270M 2m/440 3.7/6 db magnet mt ant	85.00	69.95

MOUNTS ONLY FOR ABOVE MOBILE ANTENNAS

CS-MG Magnetic mount	$ 29.00	26.95
CS-TL Trunk lip mount	29.00	26.95

PORTABLE ANTENNAS

BN-220RB 220 6" BNC duck; Icom/Yae ..Dmw	$ 19.00	14.95
BN-220RC 220 2" BNC duck; Icom/Yae ..Dmw	19.00	14.95

PORTABLE ANTENNAS FOR KENWOOD

TK-141 2m 6" TK duck for Kenwood .....Dmw	$ 17.00	12.95

CUSHCRAFT - continued

	Reg	Sale
TK-141S 2m 3" TK duck for Kenwood .....Dmw	17.00	12.95
TK-220B 220 6" TK duck for Kenwood ....Dmw	17.00	12.95
TK-220C 220 3" TK duck for Kenwood ....Dmw	17.00	12.95
TK-440B 440 6" TK duck for Kenwood ....Dmw	17.00	12.95
TK-440C 440 2" TK duck for Kenwood ....Dmw	17.00	12.95

SKYWALKER HF BEAMS

40-2CD 40m, 2 el, 23' boom, 5.5 db	$567.00	419.95
20-4CD 20m, 4 el, 32' boom, 10 db	567.00	419.95
20-3CD 20m, 3 el, 20' boom, 8 db	397.00	299.95
15-4CD 15m, 4 el, 20' boom, 10 db	320.00	239.95
15-3CD 15m, 3 el, 14' boom, 8 db	275.00	199.95
12-4CD 12m, 4 el, 18' boom, 10 db .....Dv	260.00	99.95
10-4CD 10m, 4 el, 16' boom, 10 db	270.00	199.95
10-3CD 10m, 3 el, 10' boom, 8 db	210.00	159.95
TEN-3 10m, 3 el, 8' boom, 8 db	140.00	109.95

MULTIBAND VERTICAL ANTENNAS

AV-5 80/40/20/15/10m 25' vertical	$200.00	149.95
AV-3 20/15/10m 14' vertical	110.00	84.95
AP-8 80-10m WARC 26' vert .....Dcv	265.00	149.95
APR-18 Radial kit .....Dc	58.00	39.95
AP-8A 80-10m 8-band ruggedized vertical	265.00	199.95
APR-18A Radial kit	62.00	54.95
R-5 20/17/15/12/10m half wave vert	370.00	269.95
R-57K Conversion kit; R-5 to R-7 .....Dwf	325.00	229.95
R-7 40/30/20/17/15/12/10m vertical	510.00	379.95

ROTATABLE DIPOLES

D-3 20/15/10m World Ranger dipole	$220.00	169.95
D-3W 30/17/12m rotatable dipole	225.00	179.95
D-4 40/20/15/10m World Ranger dipole	300.00	229.95
D-40 40m World Ranger dipole	268.00	199.95

MULTIBAND BEAM ANTENNAS

A-3S 20/15/10m, 3el, 14'bm, 8db, stainless hdwre	$460.00	319.95
A-743 40m or 10 MHz add-on kit; A-3/A-3S	145.00	119.95
A-4S 20/15/10m, 4el, 18'bm, 9db, stainless hdwre	550.00	389.95
A-744 40m or 10 MHz add-on kit; A-4/A-4S	145.00	119.95
A-3WS 17 & 12m, 3 el, 14' boom, 8 db	360.00	269.95
A-103 30m add-on kit for A-3WS	145.00	109.95
AFB-2 160-10m 9-band balun	57.00	49.95

LIGHTNING ARRESTORS

LAC-1 SO-239/PL-259 coax arrestor	$ 12.00	
LAC-2 SO-239/SO-239 coax arrestor	12.00	
LAC-4 200w SO-239 gas tube arrestor	40.00	34.95
LAC-4H 2kw SO-239 gas tube arrestor	44.00	39.95
LAC-4N 200w type N gas tube arrestor	52.00	44.95
LAC-4NH 2kw type N gas tube arrestor	54.00	46.95
LC-2 Extra 200w cartridge for LAC-4/4N	17.00	
LC-2KW Extra 2kw cartridge for LAC-4H/4NH	19.00	
5VB Vinyl connector boots .....pack of 5	12.00	

DC SALES (DCS)

Tenna Hitch Antenna mount for trailer hitch	$ 32.95	29.95

DRSI (DRS)

PCPA-1 Packet adapter plug-in card for IBM	$149.95	
HF Modem External HF modem for PCPA-1 or 3	89.95	
PCPA-2 Dual modem VHF packet adapter; IBM	179.95	
PCPA-3 Dual serial packet adapter for IBM	149.95	
HF Modem (PCPA-3 uses 2 for BBS)	89.95	
DCD-3105 Open squelch DCD adapter	31.95	
M-2400 2400 baud VHF modem; PCPA-1/3	149.95	
DPK-2 Packet radio TNC	114.95	
Radio cable	9.95	
RS-232 cable	12.95	

DAIWA (DAI)

CS-401G 4 pos 1.5 GHz type N coax switch .Δm	$126.50	79.95

DIAMOND (DIA)

METERS

SX-100 1.6-60 MHz 30/300/3kw PEP meter	$149.95	139.95
SX-200 1.8-200 MHz 5/20/200w PEP meter	109.95	99.95
SX-400 140-525 MHz 5/20/200w PEP meter	127.95	119.95
SX-600 Dual band 1.8-160/140-525 200w PEP meter	189.95	169.95

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DIAMOND - continued

	Reg	Sale
SX-1000 1.8-160/430-1300MHz 200w PEP meter ..	249.95	229.95
SX-9000 1.8-160/430-1300MHz auto meter ..	289.95	269.95

MOBILE ANTENNAS

CR-214S 2m/220 2.1/3.4db 37" mobile ant ..	$ 57.75	52.95
CR-214SNMO 2m/220 2.1/3.4db 38" NMO ant	69.95	64.95
CR-224A 2m/220 5/6db 69" mobile antenna	92.95	86.95
CR-320A 2m/220/440 2.15/3.8/5.5db 36"	89.95	84.95
D-505 PO-mt .5-1500 MHz active rcv ant	119.95	109.95
NR-22L 2m 6.5db 97" mobile antenna	89.95	84.95
NR-72BNMO Black 2m/440 2.15db 14" NMO .	39.95	36.95
NR-73BNMO Blk 2m/440 2.15/5.5db 34" NMO	58.95	53.95
NR-124 1.2GHz 8.4db 25" type N mobile ant .	59.95	54.95
NR-140A 220 4db 37" mobile antenna	54.95	49.95
NR-770HA 2m/440 3/5.5db 40" mobile ant ...	56.95	51.95
NR-770HNMO 2m/440 3/5.5db 40" NMO mobile ..	59.95	54.95
NR-770RA 2m/440 3/5.5db 39" mobile ant ...	56.95	51.95
NR-770SA 2m/440 2.15db 17" mobile ant ..D	44.95	39.95
NR-790A 2m/440 4.5/7.2db 57" mobile ant ..	87.95	79.95
NR-2000NA 2m/440/1.2 3/6/9.7db 39" N mob .	79.95	72.95
SG-2000A 2m 5.2db 62" mobile antenna	82.95	74.95
SG-7000A 2m/440 2.15/3.8db 19" mobile ..D	69.95	64.95
SG-7200NMO 2m/440 3.2/5.7db 38" NMO ant	84.95	79.95
SG-7500A 2m/440 3.5/6db 41" mobile ant ...	82.95	76.95
SG-7900A 2m/440 5/7.6db 62" mobile ant ...	107.95	99.95
RH-77B 2m/440 15" BNC rubber gain ant	32.95	29.95
RH-951 2m/440/1.2GHz 15" BNC rubber gain	52.95	49.95

MOBILE MOUNTS

DP-SPM/5D Hvy duty mag mt, cable; 45" max	$ 39.95
DP-SPM/58U Mag mt w/RG-58U; 45" max	38.95
DPK-4NM-M Hvy mag mt, Yaesu N, 45" max .	49.95
DPK-5NM Hvy duty mag mt, cbl, type N, 45" max .	54.95
FE-5M Two-stage coax & SO-239 mtg group .	38.95
GLP-5 UHF base mtg group hrdwr; mini coax	9.95
GLP-5N UHF mtg grp hrdwr; mini coax, Yae N	10.95
GLP-58 UHF base mounting group hardware .	9.95
K-200 Folding hatch/tnk mt; NR/SG ants	35.95
K-200KM Folding hatch/tnk mt/coax; NR/SG .	64.95
K-300 Folding gutter mt; NR/SG antennas	34.95
K-300KM Folding gutter mt w/coax; NR/SG	64.95
K-300M Gutter mt w/cable; NR/SG ants	73.95
K-400 Hatch/trunk mt; NR/SG antennas	34.95
K-400K-3/8M Mount w/cable; ⅜-24 thread	69.95
K-400M Hatch/trunk mt w/cable; NR/SG ants	73.95
K-400NMO NMO mt w/cable .....D	73.95
K-540 Mirror/luggage rack mount	35.95
K-540KM Mirror/luggage rack mt w/coax	64.95
K-600M Tilt angle trunk mt w/cable	59.95
K-600N Tilt angle tnk mt w/type N, cable	69.95
K-600P Tilt angle trunk mt w/cable, Yaesu N	69.95
NMO-UHF Adapter to NMO; not for SG, 45" max .	16.95
Larsen **PO-K** Roof mt, coax; NR/SG ants, 45" max ..	23.00
Larsen **PO-TLM** Tnk mt, coax; NR/SG ants	24.70

BASE STATION ANTENNAS

CP-4A 40/20/15/10m 11' 200w PEP vert	$259.95	239.95

DIAMOND - continued

	Reg	Sale
CP-5 80/40/20/15/10m 14.7' 200w PEP vert	309.95	289.95
CP-6 80/40/20/15/10/6m 15' 200w PEP vert	324.95	299.95
D-130J 25-1300 MHz 200w discone ant	91.95	84.95
D-707E .5-1500 MHz base active rcv ant	169.95	159.95
DP-GH62 6m 6db 21' base antenna	144.95	134.95
F-22A 2m 6.7db 10.5' base antenna	114.95	104.95
F-22J 143.5-146.5MHz 6.7db 10.5' base ant	114.95	104.95
F-23A 2m 7.8db 15' base antenna	164.95	154.95
F-23C1 148-154MHz 7.8db 15' comm base ..	175.00	164.95
F-23J 143.5-146.5MHz 7.8db 15' base ant ...	164.95	154.95
F-142A 220 MHz 5.5db 6' base antenna	129.95	114.95
F-718A 440 11.5db 15' type N base antenna	229.95	209.95
F-718C2 460-472MHz 11.5db 15' N comm ...	270.00	244.95
F-718J 428-442MHz 11.5db 15' N base ant ...	229.95	209.95
F-718L 420-430MHz 11.5db ATV N base ant .	229.95	209.95
F-1230A 1.2GHz 13.5db 10.5' type N base ant .	169.95	154.95
U-200 440/1.2GHz 8.3/11.7db 6' N base ant .	129.95	116.95
U-300A 440/1.2GHz 8.6/13.2db 8.3' N base ant .	159.95	144.95
U-300J 430-440/1.2GHz 8.6/13.2db 8.3' N base	159.95	144.95
U-5000A 2m/440/1.2GHz 4.5/8.3/11.7db 6' N	159.95	144.95
V-2000A 52-54MHz/2m/440 2.1/6.2/8.4db 8.3'	164.95	149.95
X-50A 2m/440 4.5/7.2db 5.6' base antenna .	124.95	112.95
X-200A 2m/440 6/8db 8.3' base antenna	159.95	139.95
X-300A 2m/440 6.5/9db 10.2' base ant	174.95	159.95
X-500NA 2m/440 8.3/11.7db 17.2' type N ant . D	209.95	179.95
X-500HNA Hvy duty 2m/440 8.3/11.7db 17.8' N ant ..	257.95	232.95
X-510MA 2m/440 8.3/11.7db 17.2' base ant	217.95	189.95
X-510NA 2m/440 8.3/11.7db 17.2' type N ant .	217.95	189.95
X-510NJ 143.5-146.5/428-442MHz 17.2' N ...	217.95	189.95
X-700HA 2m/440 9.3/13db 24' base ant	419.95	369.95
X-2200A 2m/220 6/7.8db 11.5' base ant	174.95	159.95
X-3200A 2m/220/440 6/7.8/8db 10' base	222.95	199.95
X-6000A 2m/440/1.2 6.5/9/10db 10.5' N	209.95	189.95

DUPLEXERS

MX-37MB HF-440/1.2 100/50w SO-239 dplxr	$ 79.95	69.95
MX-37N HF-440/1.2 100/50w type N duplexer	69.95	62.95
MX-72D HF-2m/440 400/150/100w duplexer	51.95	46.95
MX-72DN As MX-72D, w/type N on 440	59.95	54.95
MX-72H As MX-72D, w/12" cables	59.95	54.95
MX-72N As MX-72D, type N on 440, 12" cables .	59.95	54.95
MX-214 2m/220 150/100w w/12" cables	69.95	62.95
MX-324 2m/220/440 triplexer	104.95	94.95
MX-2000 HF-6m/2m/440 400/400/250w triplexer	89.95	84.95
MX-3000 HF-2m/440/1.2 400/200/100w triplexer	79.95	69.95
MX-3000D As MX-3000, no cables	79.95	69.95
MX-3000DN As MX-3000, type N on 440, 1.2 .	84.95	79.95
MX-3000N As MX-3000, type N, 12" cables ...	84.95	79.95

ACCESSORIES

CA-23R DC-1000MHz 200w N lightning protect	$ 39.95	
CA-35R DC-500MHz 400w lightning protect ..	34.95	
CM-2 BNC HT ant clip w/8' mini coax, BNC ...	17.95	
CX-210A 1.5kw DC-1000MHz coax switch	44.95	42.95
CX-210N 1.5kw DC-1500MHz N coax switch ..	79.95	74.95
DL-30A 15/100w peak 0-500MHz dummy load .	29.95	

DIAMOND - continued

	Reg	Sale
DL-30N 15/100w peak 0-500MHz N dummy ..	39.95	
DL-60 20/60w peak 0-500MHz dummy load ..	19.95	
SM-505KTS Spkr/mic for Kenwood TR-2500 ..	37.95	
SW-2 2-position 0-500MHz coax switch	28.95	

NOTE: All Diamond models stocked at Milwaukee World Headquarters. Branch stores carry items that sell well in their area.

Diamond Systems (DSY)

IBM LICENSE COURSE; THEORY/REGULATIONS/CODE

DSI-IBM-N Novice Class License software	$ 49.95	39.95
DSI-IBM-T Technician Class License software .	44.95	34.95
DSI-IBM-NC No Code Tech Class License software .	59.95	49.95
DSI-IBM-G General Class License software ...	44.95	34.95
DSI-IBM-A Advanced Class License software	59.95	49.95
DSI-IBM-E Extra Class License software	59.95	49.95

DIGIMAX (DIG)

D-500 512 MHz 8-digit counter - 1 PPM	$149.95	139.95
D-510A 1 GHz 8-digit counter - 1 PPM	179.95	159.95
D-612 1.2 GHz 9-digit counter - .1 PPM	259.95	239.95
D-1200 1.2 GHz 9-dig .1 PPM ctr/audio mult	299.95	269.95
AC-12 9vdc adaptor	8.95	
AM-12 10X/100X audio multiplier	39.95	
AM-500X X10/X100 audio multiplier .....†	69.95	59.95
B-12 Dry cell holder, switch for D-612	10.95	
BAC-5 Nicad batt pack for D-500/D-510A	29.95	
BAC-12 Nicad batt pack; D-612/D-1200	34.95	
PA-1300 10MHz - 1.3GHz 33db preamp/ps ...	89.00	
RF-500X Inline RF sampler, 250w maximum .	39.95	
T-1200 21" BNC telescopic antenna	8.95	

DRAKE (DRA)

R-8 1290 World band shortwave receiver	$979.00
1590 35-55, 108-174 MHz VHF converter ...	199.00
1591 Interface software for computers	59.00
MS-8 1592 Speaker	49.00
7850 R-8 technical manual	39.95

EIMAC TRANSMITTING TUBES (EIM)

3-400Z/8163	$188.00	
3-500Z .....†	183.00	149.95
3-500Z/2&up .....each,†		145.00
3-1000Z/8164	764.00	
3CX800A7	412.00	
3CX1200A7	665.00	
4-400A/8438	208.00	
4CX250B/7203	131.00	
4CX1000A/8168	711.00	
4X150A/7034	148.00	
8873	412.00	
8874/3CX400A7	411.00	
8875	440.00	

Note: All Items listed in this Price List are not Stocked at all AES locations.

Order Toll Free: 1-800-558-0411 *FAX: (414) 358-3337*

AMATEUR ELECTRONIC SUPPLY® Inc.

5710 W. Good Hope Road; Milwaukee, WI 53223 • Phone (414) 358-0333

AES® Store Locations	Phone	Toll Free	FAX
Milwaukee, WI 53223; 5710 W. Good Hope Road	(414) 358-0333	1-800-558-0411	(414) 358-3337
Wickliffe, OH 44092; 28940 Euclid Avenue	(216) 585-7388	1-800-321-3594	(216) 585-1024
Orlando, FL 32803; 621 Commonwealth Avenue.....	(407) 894-3238	1-800-327-1917	(407) 894-7553
Clearwater, FL 34625; 1898 Drew Street	(813) 461-4267		(813) 443-7893
Las Vegas, NV 89106; 1072 N. Rancho Drive	(702) 647-3114	1-800-634-6227	(702) 647-3412

Watch for Future AES® Branch Store Openings!

EIMAC - continued

	Reg	Sale
8877/3CX1500A7	927.00	

FORBES GROUP (FOR)

	Reg	Sale
VT-14 2m Ventenna 3' 2.6 db base ant	$ 49.95	44.95
VT-22 220 Ventenna 25" 2.6 db base ant	49.95	44.95
VT-27 2m/440 Ventenna base antenna	74.95	66.95
VT-44 440 Ventenna 14" 2.6 db base ant	49.95	44.95
VT-15S Scanner Ventenna 3' 2.6 db base ant	49.95	44.95
VT-SWL SWL Ventenna 3' 20db active rcv ant	129.95	119.95

Gamber-Johnson (GAM)

	Reg	Sale
SS-100 Super slide mount w/ant plug	$ 69.75	44.95
SS-101 Extra base for SS-100	29.75	

GAP Verticals (GAP)

	Reg	Sale
DX-VIII 80/40/20/15/12/10/6/2m, 31.5'	$249.95	
(SYN) 100' 3/32" black double braided rope	6.95	
DX-VI 40/20/17/15/12/10m 21.5', rigid	259.95	
DX-IV 160/80/40/20m 45'; needs 350' guy	389.95	
(SYN) 350' 3/16" black double braided rope	39.95	

We do NOT carry GAP antennas at Wickliffe, Ohio.

GOLD LINE (GOL)

	Reg	Sale
1043 Signal Hunter 10m direction finding ant	$ 55.00	49.95

GRUNDIG (GRU)

	Reg	Sale
Satellit 500 AC/DC/batt AM/FM/SW/LW Rcvr †	$499.95	399.95
Satellit 700 AC/DC/batt AM/FM/SW/LW Rcvr	799.95	619.95
Traveller II Port AM/FM/SW/LW Rcvr/clock	109.95	99.95
Yacht Boy 206 Portable AM/FM/SW/LW Rcvr	149.95	129.95
Yacht Boy 220 Port AM/FM/SW/LW Rcvr ...Dwfv	129.95	99.95
Yacht Boy 230 Portable AM/FM/SW/LW Rcvr D	199.95	179.95

HAMPUTE (HAM)

	Reg	Sale
PC-1 Half-length DSP filtering card for IBM	$249.00	229.95

HEIL (HEI)

Note: Each microphone colored cable corresponds to the manufacturer's name: Icom (blue), Kenwood (red), Ten-Tec (black) & Yaesu (yellow). To order correct cable, please include equipment manufacturer's name.

	Reg	Sale
BM-5-4 Boom mic/single headset (HC-4)	$ 64.90	
BM-5-5 Boom mic/single headset (HC-5)	64.90	
BM-5-4-I Bm mic/single headset; Icom (HC-4)	69.90	
BM-5-4-K Bm mic/single headset; Kenwood (HC-4)	69.90	
BM-5-4-T Bm mic/single headset; Ten-Tec (HC-4)	69.90	
BM-5-4-Y Bm mic/single headset; Yaesu (HC-4)	69.90	
BM-5-5-I Bm mic/single headset; Icom (HC-5)	69.90	
BM-5-5-K Bm mic/single headset; Kenwood (HC-5)	69.90	
BM-5-5-T Bm mic/single headset; Ten-Tec (HC-5)	69.90	
BM-5-5-Y Bm mic/single headset; Yaesu (HC-5)	69.90	
BM-10-4 Boom mic/headset (HC-4)	71.90	
BM-10-5 Boom mic/headset (HC-5)	71.90	
BM-10-4-I Boom mic/headset; Icom (HC-4)	85.90	
BM-10-4-K Boom mic/headset; Kenwood (HC-4)	85.90	
BM-10-4-T Boom mic/headset; Ten-Tec (HC-4)	85.90	
BM-10-4-Y Boom mic/headset; Yaesu (HC-4)	85.90	
BM-10-5-I Boom mic/headset; Icom (HC-5)	85.90	
BM-10-5-K Boom mic/headset; Kenwood (HC-5)	85.90	
BM-10-5-T Boom mic/headset; Ten-Tec (HC-5)	85.90	
BM-10-5-Y Boom mic/headset; Yaesu (HC-5)	85.90	
FS-1 Foot switch	24.95	
HS-1 Hand switch	19.95	
HC-4 DX'ers 'dream machine' mic element	28.90	
HC-5 Mic element for Icom SM-5/SM-6	28.90	
HM-10-4-I Microphone for Icom (HC-4)	85.90	
HM-10-4-K Microphone for Kenwood (HC-4)	85.90	
HM-10-4-T Microphone for Ten-Tec (HC-4)	85.90	
HM-10-4-Y Microphone for Yaesu (HC-4)	85.90	
HM-10-5-I Microphone for Icom (HC-5)	85.90	
HM-10-5-K Microphone for Kenwood (HC-5)	85.90	
HM-10-5-T Microphone for Ten-Tec (HC-5)	85.90	
HM-10-5-Y Microphone for Yaesu (HC-5)	85.90	
HM-10-Dual-I Microphone for Icom	131.90	
HM-10-Dual-K Microphone for Kenwood	131.90	
HM-10-Dual-T Microphone for Ten-Tec	131.90	
HM-10-Dual-Y Microphone for Yaesu	131.90	
MA-1 Clamp and arm for HM-10	49.95	
TB-1 Table base mic stand for HM-10	12.95	
B-4 Microphone boom (HC-4)	41.90	
B-5 Microphone boom (HC-5)	41.90	

HEIL - continued

	Reg	Sale
B-4-I Microphone boom; Icom (HC-4)	47.90	
B-4-K Microphone boom; Kenwood (HC-4)	47.90	
B-4-T Microphone boom; Ten-Tec (HC-4)	47.90	
B-4-Y Microphone boom; Yaesu (HC-4)	47.90	
B-5-I Microphone boom; Icom (HC-5)	47.90	
B-5-K Microphone boom; Kenwood (HC-5)	47.90	
B-5-T Microphone boom; Ten-Tec (HC-5)	47.90	
B-5-Y Microphone boom; Yaesu (HC-5)	47.90	
CC-1-I Cable for Icom	21.90	
CC-1-K Cable for Kenwood	21.90	
CC-1-T Cable for Ten-Tec	21.90	
CC-1-Y Cable for Yaesu	21.90	
FL-1 Flexlite	22.90	
FL-2 Flexlite	32.50	
Ham Radio Handbook	10.00	
Ear Pads ....pair	5.00	
Boom Clip	5.00	

HUSTLER (HUS)

	Reg	Sale
RM-80 80m CW 400w PEP resonator	$ 26.95	24.95
RM-75 75m phone 400w PEP resonator	26.95	24.95
RM-40 40m 400w PEP resonator	24.95	22.95
RM-30 30m 400w PEP resonator	24.95	22.95
RM-20 20m 400w PEP resonator	21.95	19.95
RM-17 17m 400w PEP resonator	21.95	19.95
RM-15 15m 400w PEP resonator	15.95	14.95
RM-12 12m 400w PEP resonator	15.95	14.95
RM-11 11m 400w PEP resonator	15.95	14.95
RM-10 10m 400w PEP resonator	15.95	14.95
RMX-B Black 10m resonator w/mast	34.95	31.95
RMX-W White 10m resonator w/mast	34.95	31.95
RM-80S 80m CW 2kw PEP resonator	49.95	44.95
RM-75S 75m phone 2kw PEP resonator	49.95	44.95
RM-40S 40m 2kw PEP resonator	35.95	32.95
RM-20S 20m 2kw PEP resonator	28.95	26.95
RM-15S 15m 2kw PEP resonator	24.95	22.95
RM-11S 11m 2kw PEP resonator	23.95	21.95
RM-10S 10m 2kw PEP resonator	23.95	21.95
MO-1 54" mast for fender or deck mount	31.95	29.95
MO-2 54" mast for bumper mount	31.95	29.95
MO-3 54" no break-over mast	23.95	22.95
MO-4 22" mast for special applications	19.95	
VP-1 Tri-band adapter	5.95	
RSS-2 Resonator spring	9.95	
QD-2 Stainless quick disconnect	19.95	
L-14-144 12' RG-58, PL-259 to lugs	9.95	
L-14-240 20' RG-58, PL-259 to lugs	12.95	
LU-216 18' RG-58, PL-259s both ends ....D	13.95	

STAINLESS 2" MOBILE BALL MOUNTS

	Reg	Sale
SSM-1 Ball & spring, cadmium hardware	$ 46.95	42.95
SSM-2 Ball, cadmium hardware	26.95	24.95
SSM-3 Stainless steel spring	24.95	22.95

1-1/2" MOBILE BALL MOUNTS

	Reg	Sale
C-32 Chrome plated ball	$ 11.95	
C-30 Chrome plated spring	11.95	
C-29 Stainless steel spring	17.95	
BM-1 Single strap bumper mt w/C-32	21.95	19.95

3/8-24 THREAD MOBILE MOUNTS

	Reg	Sale
GCM-1 Rain gutter mount	$ 12.95	
HLM Trunk lip mount w/swivel	22.95	
HOT Hustloff trunk lip mt w/swivel	23.95	
MM-1 Cowl mount w/SO-239 & 3/8-24 base	14.95	
MM-3 Universal mount with 17' coax	21.95	
RVM Recreational vehicle mount	20.95	
TGM-1 Trunk grove mount	12.95	
TLM Trunk lip mount	21.95	

HF ANTENNAS

	Reg	Sale
4-BTV 40/20/15/10m 21' trap vertical	$134.95	99.95
5-BTV 80/40/20/15/10m 25' trap vertical	179.95	129.95
30-MTK 30m trap kit for 4-BTV/5-BTV	41.95	
6-BTV 80/40/30/20/15/10m 24' trap vert	209.95	149.95
VRK-1 Radial kit for HF verticals	37.95	

VHF BASE STATION ANTENNAS

	Reg	Sale
G6-144B 2m 6 db 10' vertical antenna	$133.95	109.95
G6-270 2m/440 6db 7.6' base station ant	199.95	149.95
G7-144 2m 7 db 15' vertical antenna	199.95	149.95
G7-220 220 MHz 7 db 10' vertical antenna	189.95	139.95
G6-440 440 MHz 6 db 7' vertical antenna	179.95	129.95

HUSTLER - continued

VHF MOBILE ANTENNAS

	Reg	Sale
BBL-144A 2m FM 3/4" hole mt antenna, 3.4db	$ 39.95	36.95
BBLT-144A 2m FM trunk lip mt ant, 3.4 db	47.95	42.95
CG-144 2m FM 3/8-24 ant, 7' high, 5.2 db	31.95	28.95
CGT-144 2m FM trunk mt ant, 7' high, 5.2db	51.95	46.95
CG-220 220 FM 3/8-24 antenna, 5.2 db	31.95	28.95
CGT-220 220 MHz 5.2 db trunk mt antenna	51.95	46.95
FX-2 2m FM 3.4 db magnetic mt antenna	33.95	29.95
FX-2B 2m FM 3.4 db black mag mt antenna	38.95	34.95
FX-220 220 FM 3.4 db magnetic mt ant	33.95	29.95
FX-220B 220 FM 3.4 db black mag mt ant	38.95	34.95
FXM FX-style magnet mount w/coax	19.95	
MKR-2 Radial kit for SF-2/CG-144	20.95	
RX-2 2m FM 3.4db magnetic mount ant	24.95	22.95
RX-220 220 FM 3.4db magnetic mt antenna	24.95	22.95
RX-440 440 FM 5 db magnetic mt antenna	24.95	22.95
RXM RX-style magnet mount w/coax ....D	14.95	
SF-2 2m FM 3/8-24 ant, 4' high, 3.4 db	14.95	
SF-220 220 MHz 3/8-24 antenna, 3 db	14.95	
THF 140-500 MHz 1/4 wave trunk mount ant	23.95	
UGM 140-500 MHz 1/4 wave BNC mag mt ant	21.95	
UHT-1 140-500 MHz 1/4 wave roof mt ant	14.95	

ICOM (ICO)

	Reg	Sale
IC-781 Xcvr/Rcvr/ps/auto tuner/spectrum scope	6529.00	5298
FL-103 2.8 KHz SSB filter	76.00	
UT-36 Voice synthesizer	37.75	
IC-765 Xcvr/ps/keyer/auto tuner	2859.00	2348
CR-282 High stability crystal unit	105.00	
FL-53A 250 Hz CW filter (2nd IF)	120.75	109.95
FL-101 250 Hz CW filter (1st IF)	77.25	
FL-102 6 KHz AM filter	62.00	
HM-36 Scanning hand mic	49.25	
MB-19 Rack mounting handles	45.00	
SM-6 Desk microphone	50.25	
SP-20 Speaker w/audio filter	156.25	144.95
UT-30 Tone encoder	19.25	
UT-36 Voice synthesizer	37.75	
IC-751A Xcvr/SW Rcvr/mic/kyr/cw filter	1629.00	1348
PS-35 Internal power supply	239.00	219.95
PS-15 20A power supply	219.00	189.95
CR-64 High stability oscillator crystal	83.00	
EX-310 Voice synthesizer	62.00	
FL-63A 250 Hz CW filter (1st IF)	62.00	
FL-52A 500 Hz CW filter (2nd IF)	120.75	109.95
FL-53A 250 Hz CW filter (2nd IF)	120.75	109.95
FL-70 2.8 KHz wide SSB filter	62.00	
HM-12 Extra hand microphone	49.25	
MB-18 Mobile mount	27.25	
SM-6 Desk microphone	50.25	
SP-3 External speaker	68.25	
SP-7 Small external speaker	54.75	
SP-20 Speaker w/audio filter	156.25	144.95
EX-241 Marker unit for IC-745 ....Dm	24.50	
EX-242 FM unit for IC-745 ....Dm	49.00	
IC-735 Xcvr/SW Rcvr w/mic	1149.00	949.95
PS-55 Power supply	239.00	219.95
PS-15 20A power supply	219.00	189.95
AH-2 Antenna tuning sys w/bpr mt & whip	819.00	699.95
AH-2A Antenna tuning system only	610.25	519.95
AT-150 100w 9-band automatic ant tuner	469.00	399.95
EX-243 Electronic keyer unit	68.00	
FL-32A 500 Hz CW filter	72.25	
FL-63A 250 Hz CW filter	62.00	
MB-5 Mobile mount	27.25	
SM-6 Desk microphone	50.25	
SP-3 External speaker	68.25	
SP-7 Small external speaker	54.75	
SP-20 Speaker w/audio filter	156.25	144.95
UT-30 Tone encoder	19.25	
IC-728 Xcvr/SW Rcvr w/mic	1099.00	899.95
IC-729 Xcvr/SW Rcvr w/6m	1419.00	1168

Until 11/30/92 SAVE on the purchase of an IC-728 or IC-729 along with AT-160 tuner:

IC-728/AT-160 Reg $1249.90 COMBO $1129
IC-729/AT-160 Reg $1517.95 COMBO $1398

	Reg	Sale
PS-55 Power supply	239.00	219.95
PS-15 20A power supply	219.00	189.95

ICOM - continued

	Reg	Sale
AH-3 Automatic antenna tuner	512.75	449.95
AH-2B Bumper mt & whip for AH-3	208.75	199.95
AT-160 Attached automatic ant tuner	413.00	349.95
CR-64 High stability oscillator crystal	83.00	
FL-100 500 Hz CW filter	81.00	
FL-101 250 Hz CW filter	77.25	
MB-5 Mobile mount	27.25	
SM-6 Desk microphone	50.25	
SP-3 External speaker	68.25	
SP-7 Small external speaker	54.75	
SP-20 Speaker w/audio filter	156.25	144.95
UI-7 AM/FM module for IC-728	75.25	
UT-30 Tone encoder	19.25	
IC-726 10-band Xcvr w/6m/SW Rcvr .....Dm	1283.00	1058
IC-725 Xcvr/SW Rcvr w/mic .....†	893.00	739.95
PS-55 Power supply	239.00	219.95
AH-3 Automatic antenna tuner	512.75	449.95
AH-2B Bumper mt & whip for AH-3	208.75	199.95
CR-64 High stability oscillator crystal	83.00	
FL-100 500 Hz CW filter	81.00	
FL-101 250 Hz CW filter	77.25	
MB-5 Mobile mount	27.25	
SM-6 Desk microphone	50.25	
SP-20 Speaker w/audio filter	156.25	144.95
UI-7 AM/FM module	75.25	
UT-30 Tone encoder	19.25	
IC-2KL 160-15m/WARC solid state linear	2119.00	1768
IC-4KL 1kw output solid state linear	7459.00	5998
OPC-118 Adapter; 2KL/4KL; 725/735/765	17.99	
AH-2 Antenna tuning sys w/bpr mt & whip	819.00	699.95
AH-2A Antenna tuning system only	610.25	519.95
OPC-137 Adapter; AH-2/2A to IC-751A/745	17.99	
AT-150 100w 9-band automatic ant tuner	469.00	399.95
OPC-137 Adapter; AT-150 to IC-751A/745	17.99	
AT-500 500w 9-band automatic ant tuner	618.25	529.95
OPC-118 Adapter; AT-500; 725/735/765/781	17.99	

SHORTWAVE RECEIVERS

R-1 100KHz-1.3GHz AM/FM handheld Rcvr	$539.00	449.95
AD-15A Power supply	41.25	
HP-4 Lightweight headphones	13.25	
Note: R-1 uses 'S'-series HT accessories		
R-71A 100 KHz - 30 MHz dig keyboard Rcvr	1209.00	989.95
CK-70 (EX-299) 12v DC option	13.75	
CR-64 High stability oscillator crystal	83.00	
EX-257 FM unit	51.50	
EX-310 Voice synthesizer	62.00	
FL-32A 500 Hz CW filter	72.25	
FL-44A SSB filter	187.00	169.95
FL-63A 250 Hz CW filter	62.00	
MB-12 Mobile mount	27.25	
RC-11 Infrared wireless remote control	74.75	
SP-3 External speaker	68.25	
R-72 30 KHz - 30 MHz shortwave Rcvr	1109.00	929.95
CP-11 Cig cord w/noise filter	20.00	
CR-64 High stability oscillator crystal	83.00	
FL-100 500 Hz CW filter	81.00	
FL-101 250 Hz CW filter	77.25	
MB-5 Mobile mount	27.25	
SP-3 External speaker	68.25	
SP-20 Speaker w/audio filter	156.25	144.95
UI-8 FM unit	66.00	
UR-1 Receiver protector	18.00	
UT-36 Voice synthesizer	37.75	
R-100 100KHz-1.856GHz AM/FM 12v Rcvr	729.00	599.95
AD-15A Power supply	41.25	
AH-7000 25-1000 MHz discone antenna	104.00	
CP-11 Cig cord w/noise filter	20.00	
HP-4 Lightweight headphones	13.25	
R-7000 25 MHz - 2 GHz scanning receiver	1439.00	1198
AH-7000 25-1000 MHz discone antenna	104.00	
CK-70 (EX-299) 12v DC option	13.75	
EX-310 Voice synthesizer	62.00	
MB-12 Mobile mount	27.25	
RC-12 Infrared wireless remote control	74.75	
SP-3 External speaker	68.25	
TV-R7000 ATV unit for R-7000	184.00	169.95
R-7100 25 MHz - 2 GHz scanning receiver	1479.00	1228
AH-7000 25-1000 MHz discone antenna	104.00	
MB-5 Mobile mount	27.25	
MB-23 Carrying handle	8.25	

ICOM - continued

	Reg	Sale
SP-3 External speaker	68.25	
SP-7 Small external speaker	54.75	
SP-20 Speaker w/audio filter	156.25	144.95
TV-R7100 TV/FM adapter	225.00	199.95
UT-36 Voice synthesizer	37.75	
R-9000 .1-1999.8MHz Rcvr/spectrum scope	5859.00	4898
SP-20 Speaker w/audio filter	156.25	144.95
UT-36 Voice synthesizer	37.75	

6m TRANSCEIVERS

IC-575A 10w 6/10m FM/SSB/CW Xcvr/ps Dmwfv	1455.00	1158
IC-575H 100w 6 & 10m FM/SSB/CW Xcvr	1699.00	1398
AH-610 Dual band 6/10m base antenna	114.25	109.95
EX-20 6/10m automatic ant selector	79.00	
CR-64 High stability oscillator crystal	83.00	
FL-100 500 Hz CW filter	81.00	
PS-55 Power supply for IC-575H	239.00	219.95
UT-36 Voice synthesizer	37.75	

2m TRANSCEIVERS

IC-28H 45w 2m FM Xcvr w/TTP mic	$389.00	329.95
IC-228H 45w 2m FM Xcvr w/TTP mic	429.00	349.95
IC-229A 25w 2m FM Xcvr w/TTP mic	439.00	369.95
IC-229H 50w 2m FM Xcvr w/TTP mic	439.00	369.95
HM-56 Extra autodial TTP mic	72.25	
UT-50 Tone squelch unit	46.25	
UT-55 DTMF tone encoder/decoder unit	34.25	
IC-275H 100w 2m FM/SSB/CW Xcvr	1589.00	1298
AG-25 Mast mounted GaSFET preamp	134.75	124.95
CR-64 High stability oscillator crystal	83.00	
FL-83 CW filter	89.25	
PS-55 Power supply	239.00	219.95
UT-34 Tone squelch unit	54.75	
UT-36 Voice synthesizer	37.75	
IC-2330A 45w 2m/25w 220 FM Xcvr/TTP	821.00	689.95
IC-3220A 25w 2m/440 FM Xcvr/TTP mic ..Dm	685.00	569.95
IC-3230A 25w 2m/440 FM Xcvr w/TTP mic	739.00	619.95
IC-3230H 45w 2m/35w 440 FM Xcvr/TTP	839.00	699.95
HM-56 Extra autodial TTP mic	72.25	
UT-50 Tone squelch unit	46.25	
UT-55 DTMF tone encoder/decoder unit	34.25	
UT-66 Voice synthesizer; 2330A/3230A/H	41.00	
UT-67 Tone squelch unit	64.00	
IC-2410AB (black) 25w 2m/440 FM/TTP Dmwfv	889.00	729.95
IC-2410HB (black) 45/35w 2m/440 FM/TTP .....Dmf	931.00	769.95
IC-2410A (orange) 25w 2m/440FM/TTP Dmwv	889.00	729.95
IC-2410H (orange) 45/35w 2m/440 FM/TTP	939.00	769.95
HM-56 Extra autodial TTP mic	72.25	
UT-55 DTMF tone encoder/decoder unit	34.25	
UT-66 Voice synthesizer	41.00	
UT-67 Tone squelch unit	64.00	
AH-32 2m/440 dual band mobile antenna	41.25	
Larsen **PO-K** Roof mt, coax for AH-32	23.00	
Larsen **PO-MM** Magnet mt, coax; AH-32	28.75	
Larsen **PO-TLM** Trunk lip mt, coax; AH-32	24.70	
Icom **AHB-32** Trunk lip mt, coax; AH-32	36.75	

Accessories for IC-u2AT

BC-50 Desk quick cgr; not for BP-20 .....Δm	$ 35.00	
BP-23 600ma 8.4v long life battery .....Δm	49.00	29.95
MB-20 Belt clip .....Δv	4.15	
IC-2A 1.5w 2m FM HT/batt/cgr .....Dmwfv		199.95
IC-2AT 1.5w 2m FM HT/batt/cgr/TTP	269.00	219.95
IC-02AT/HP Dlx 5w 2m FM HT/batt/cgr/TTP	349.00	289.95
IC-2GAT Dlx 1/7w 2m FM HT/batt/cgr/TTP	399.00	329.95
3A-TTN 16-button TTP front; 2A/3A/4A Δmv	51.25	49.95
AD-12 External pwr adapter; 2/4GAT/32AT	25.75	
BA-10 Bottom slide cap	6.25	
BC-16U Wall charger; BP-5A/7/8 only	23.00	
BC-25U Extra wall charger; BP-3 only	19.00	
BC-35 Drop-in rapid charger; all batteries	82.25	79.95
BP-2* 425ma 7.2v long life batt; all HTs	53.25	
BP-3 250ma 8.4v battery; all HTs	42.75	
BP-4 Alkaline battery case; all HTs	18.00	
BP-5* 425ma 10.8v high power batt; all HTs	68.25	
*BC-35 required to charge BP-2/5		
BP-5A 425 ma 10.8v direct charge batt; all	68.25	
BP-7 425ma 13.5v 5w batt; deluxe HTs only	83.00	
BP-8 800ma 8.4v long life batt; all HTs	83.00	
BP-70* Extra 270ma 13.2v batt; 2GAT/32AT	72.25	
*BP-70 9-hours max charge time in BC-35		
CA-5/Vocom ⅝ wave telescoping 2m ant	19.95	

ICOM - continued

	Reg	Sale
CM-12 Alkaline batt case (10 AAs); dlx HTs	28.25	
CP-1 Cig cgr; BP-3/7/8//DC cord; dlx HTs	15.75	
CP-10 Battery separation cable w/clip	23.25	
CP-11 Cig cord w/noise filter; dlx HTs	20.00	
DC-1 DC operation module; std HTs	25.75	
FA-2 Extra 2m flexible antenna	12.75	
FA-140B Extra 2m flex ant for IC-2GAT	14.75	
FA-1443B Extra 2m/440 dual band flex ant	16.75	
HH-SS Handheld shoulder strap	17.75	
HM-9 Speaker/mic; all HTs	49.25	
HM-46 Slim-line speaker/mic	33.75	
HM-46L Slim-line spkr/mic for 2GAT	33.75	
HS-10 Boom mic/headset	27.00	
HS-10SA VOX unit (deluxe HTs only)	27.00	
HS-10SB PTT switchbox	27.00	
HS-51 Headset w/VOX	62.00	59.95
LC-02AT Leather case; deluxe HTs w/BP-7/8	57.25	
LC-2GAT Leather case for IC-2GAT	57.25	
LC-11 Vinyl case; deluxe HTs w/BP-3	21.75	
LC-12 Vinyl case; deluxe HTs w/BP-5	21.75	
LC-14 Vinyl case for deluxe HTs w/BP-7/8	21.00	
LC-32AT Leather case for IC-32AT	57.25	
LC-38 Vinyl case; 2GAT w/BP-2/3/4	20.25	
LC-39 Vinyl case: 2GAT w/BP-5/70	20.25	
LC-40 Vinyl case; 2GAT w/BP-5A/7/8	20.25	
LC-41 Vinyl case; 32AT w/BP-2/3/4	20.25	
LC-42 Vinyl case; 32AT w/BP-5/70	20.25	
LC-43 Vinyl case; 32AT w/BP-5A/7/8	20.25	
MB-16 Window/car door mount	27.25	
MB-16D Mobile mtg bkt for all HTs	27.25	
MB-24 Window/car door mt; 2GAT	27.25	
PS-70 2A ps for HT; 2G/32AT needs AD-12 †	79.00	69.95
RB-1 Vinyl waterproof radio bag	37.75	
UT-40 Tone squelch decoder; 2GAT/32AT	46.25	
IC-P2AT Mini 2m FM HT/batt/cgr/TTP	419.00	349.95
BC-80 Desk charger; BP-112-114, BP-81-85	125.50	116.95
BC-74 Extra wall charger; BP-111-114	22.25	
BP-110 Alkaline battery case	18.75	
BP-111 Extra 7.2v 400ma 1.5w battery	49.50	
BP-112 7.2v 700ma 1.5w battery	58.50	
BP-113 7.2v 1200ma 1.5w battery	78.50	
BP-114 12v 400ma 5w battery	96.00	
CP-12 Cig lighter cable w/filter	19.25	
HM-9 Speaker/microphone	49.25	
HM-46 Slim-line microphone	33.75	
HM-54 Heavy duty speaker/mic	49.25	
HS-51 Headset w/VOX	62.00	59.95
LC-91 Vinyl case; BP-111	19.50	
LC-92 Vinyl case; BP-110/112	19.50	
LC-93 Vinyl case: BP-113/114	19.50	
MB-30 Mobile/wall bracket	27.25	
OPC-254 Mini DC power cable	5.25	
UT-49 DTMF decoder unit	24.75	
IC-2SAT 2/5w 2m FM HT/batt/cgr/TTP	379.00	309.95
IC-2SRA 2/5w 2m FM HT/25-905 MHz Rcvr	579.00	479.95
IC-24AT 2/5w 2m/440 FM HT/batt/cgr/TTP	459.00	379.95
IC-W2A 2/5w 2m/440 FM HT/batt/cgr/TTP	589.00	499.95
AD-14 BC-74 charge adapter	18.75	
AD-20 BC-77 charge adapter	19.25	
BA-11 Bottom cap	6.25	
BA-12 Drop-in charger adapter	18.00	
BC-72 Rapid desk charger	114.25	109.95
BC-74 Extra wall cgr; 24AT & S-series	22.25	
BC-77 Extra wall cgr; W2A/2SRA	22.25	
BP-81 7.2v 110ma battery	41.00	
BP-82 7.2v 300ma battery	47.25	
BP-83 7.2v 600ma battery	51.25	
BP-84 7.2v 1000ma battery	78.75	
BP-85 12v 340ma 5w battery	104.00	
BP-90 AA battery case	16.75	
CP-12 Cig lighter cable w/filter	19.25	
CP-13 Cig cable w/filter; W2A/2SRA	19.25	
HM-9 Speaker/microphone	49.25	
HM-46 Slim-line speaker/mic	33.75	
HM-54 Hvy duty spkr/mic; not for 2G/W2A	49.25	
HM-65 Slim-line spkr/mic; W2A/2SRA	35.75	
HM-70 Speaker/mic; W2A/2SRA	36.75	
HS-51 Headset w/VOX	62.00	59.95
HS-60 VOX headset; W2A/2SRA	68.25	
LC-24(L) Leather case; 24AT w/BP-85	57.25	

ICOM - continued

	Reg	Sale
LC-53 Vinyl case; 2SA w/no battery	20.25	
LC-55 Vinyl case; 2SA w/BP-82/83/90	20.25	
LC-56 Vinyl case; 2SA w/BP-84/85	20.25	
LC-57 Vinyl case; 2SAT w/no battery	20.25	
LC-59 Vinyl case; 2SAT w/BP-82/83/90	20.25	
LC-61 Vinyl case; 2SAT w/BP-84/85	20.25	
LC-63 Vinyl case; 24AT w/BP-81/BA-11	20.25	
LC-65 Vinyl case; 24AT w/BP-82/83/90	20.25	
LC-66 Vinyl case; 24AT w/BP-84/95	20.25	
LC-71 Case; W2A/2SRA w/BP-81/BA-11	20.25	
LC-72 Case; W2A/2SRA w/BP-82/83/90	20.25	
LC-73 Case; W2A/2SRA w/BP-84/85	20.25	
LC-SAT(L) Leather case; 2SAT w/BP-85	57.25	
MB-22 Alligator belt/pocket clip	8.00	
MB-25 Stainless steel wall storage unit	27.25	
MB-30 Mobile/wall bracket	27.25	
OPC-254 Mini DC power cable	5.25	
OPC-288 Mini DC pwr cord; W2A/2SRA	11.75	
PS-70 2A power supply for HT †	79.00	69.95
UT-49 DTMF decoder unit for S-series	24.75	
UT-50 Tone squelch unit	46.25	
UT-51 Programmable tone encoder unit	48.25	
RP-1520 25w 2m FM repeater	2369.00	1968

220 MHz TRANSCEIVERS

	Reg	Sale
IC-03AT 2.5w 220 HT/batt/cgr/TTP	$329.00	279.95
IC-3SAT 2/5w 220 HT/batt/cgr/TTP	359.00	299.95
IC-P3AT Mini 220 FM HT/batt/cgr/TTP	419.00	359.95

IC-03AT uses same accessories as IC-02AT/HP
IC-3SAT uses same accessories as IC-2SAT
IC-P3AT uses same accessories as IC-P2AT

	Reg	Sale
IC-38A 25w 220 FM Xcvr w/TTP mic	439.00	369.95
RP-2210 25w 220 MHz FM repeater	2009.00	1658

430/440 MHz TRANSCEIVERS

	Reg	Sale
IC-4GAT Dlx 1/6w 440 HT/batt/cgr/TTP	$399.00	329.95
IC-4SAT 2/5w 440 HT/batt/cgr/TTP	399.00	329.95
IC-4SRA 2/5w 440 HT/25-905 MHz Rcvr	579.00	489.95
IC-P4AT Mini 440 FM HT/batt/cgr/TTP	469.00	389.95
IC-X2A 5/1w 440/1.2 FM HT/batt/cgr/TTP	749.00	629.95

IC-4GAT uses same accessories as IC-2GAT
IC-4SAT uses same accessories as IC-2SAT
IC-4SRA uses same accessories as IC-2SRA
IC-P4AT uses same accessories as IC-P2AT
IC-X2A uses same accessories as IC-W2A

	Reg	Sale
IC-449A 35w 440 FM Xcvr w/TTP mic	529.00	439.95
IC-475H 75w 430-450 FM/SSB/CW Xcvr	1819.00	1498
AG-35 Mast mounted preamp	138.75	129.95
CR-64 High stability oscillator crystal	83.00	
FL-32A CW filter	72.25	
PS-55 Power supply	239.00	219.95
UT-34 Tone squelch unit	54.75	
UT-36 Voice synthesizer	37.75	
RP-4020 25w 440 MHz FM repeater	2439.00	1998
RP-4020/50w 50w 440 MHz FM repeater	2649.00	2198

1.2 GHz TRANSCEIVERS

	Reg	Sale
IC-12GAT 1w 1.2GHz FM HT/batt/cgr/TTP	$519.00	429.95
FA-1240T Extra flexible ant for IC-12GAT	14.75	

Note: IC-12GAT uses same accessories as IC-2GAT

	Reg	Sale
IC-1201 10w 1.2 GHz FM Xcvr	849.00	719.95
CR-263 High stability xtal unit; IC-1275A ..Δ	96.75	
TV-1275 ATV adapter for IC-1275A .....Δ	230.00	199.95
RP-1220 10w 1.2 GHz FM repeater	2759.00	2298

MULTI-BAND FM TRANSCEIVER

	Reg	Sale
OPC-184 High power DC cord .....Δw	$ 20.95	6.95
UX-49A 25w 440 unit for IC-900A .....Δmv	369.00	319.95
IC-901 Fiber optic 50w 2m/35w 440 FM Xcvr	1069.00	879.95
EX-766 Interface & cable for trunk mtg	50.25	
EX-767 Power cable connector box	45.00	
MB-21 Bracket for controller unit	14.25	
MB-31 Mounting bkt for band units	12.00	
MB-32 Mobile mount for trunk	16.75	
OPC-189 Optical fiber cable 65' extension	74.99	
OPC-243 30' DC cable	33.49	
UT-40 Tone squelch decoder	46.25	
UT-48 DTMF encoder/decoder unit	46.25	
UX-R91A Broadband receiver unit	539.00	449.95
UX-19A 10w 10m unit	319.00	269.95
UX-59A 10w 6m unit	369.00	319.95
UX-S92A 2m SSB/CW module	639.00	549.95

ICOM - continued

	Reg	Sale
UX-39A 25w 220 unit	479.00	399.95
UX-129A 10w 1.2 GHz unit	589.00	489.95

MULTI-BAND ALL-MODE TRANSCEIVERS

	Reg	Sale
IC-970A 25w 2m/430 Xcvr w/ps	2839.00	2348
IC-970H 45w 2m/430 Xcvr w/ps	3079.00	2548
AG-25 2m mast mounted GaSFET preamp	134.75	124.95
AG-35 430 MHz mast mounted preamp	138.75	129.95
AG-1200 1.2 GHz mast mounted preamp	110.25	
CR-293 High stability xtal unit	217.00	199.95
EX-243 Electronic keyer unit	68.00	
FL-132 Main band CW filter	74.75	
FL-133 Sub band CW filter	74.75	
MB-19 Rack mounting handles	45.00	
PS-15 20A power supply	219.00	189.95
PS-35 Extra internal power supply	239.00	219.95
PS-55 Power supply	239.00	219.95
SP-20 Speaker w/audio filter	156.25	144.95
TV-970 1.2 GHz ATV unit for IC-970A/H	308.00	269.95
UT-34 Tone squelch unit	54.75	
UT-36 Voice synthesizer	37.75	
UX-R96 50-905 MHz receive unit	419.00	349.95
UX-97 1.2 GHz band unit	1059.00	899.95

ACCESSORIES

	Reg	Sale
CT-16 Satellite interface unit	$102.25	
CT-17 CI-V level converter	102.25	
UX-14 CI-IV/CI-V converter for CT-17	76.00	
DM-10 Combination probe multimeter .....Dmwv	62.00	49.95
EX-309 Interface plug; 751/271/471/R-71A	62.00	
EX-310 Voice synthesizer	62.00	
EX-627 HF auto ant selector; up to 7 ants	330.25	289.95
HM-5 Noise canx mobile mic, 4-pin	42.00	
HM-7 Amplified mobile mic, 8-pin	34.25	
HM-8 TTP microphone, 8-pin	62.00	
HM-11 Scan mic; 490A/25A/290A .....Dmw	47.00	39.95
HM-12 Scan hand microphone	49.25	
HM-14 Scan/TTP mic; 25A/H/28A/45A	62.00	
HM-16 Speaker/mic for mobile .....Dmwfv	34.00	14.95
HS-15 Goose neck mobile microphone	36.25	
HS-15SB PTT switchbox	27.25	
MB-23 Side mount carrying handle	8.25	
OPC-047 24-pin optional accessory cord	16.50	
OPC-137 24-pin adapter cable; all base Xcvrs	17.99	
PS-30 20A systems ps w/6-pin cord	379.00	329.95
OPC-045 Extra 6-pin cord (HF)	10.50	
OPC-052 2-pin cord	10.50	
OPC-053 4-pin cord	10.50	
PS-45 Compact 8A power supply	159.00	144.95
SM-6 Electret desk microphone	50.25	
SM-8 2-connector desk mic w/up/down scan	93.25	
SM-20 Stand mic for base stations	139.25	129.95
SP-3 External speaker	68.25	
SP-5 Mobile speaker	30.25	
SP-7 Small external speaker	54.75	
SP-10 Slim-line external speaker	37.75	
SP-12 Slim-line speaker w/visor clip	27.25	
SP-20 Speaker w/audio filter	156.25	144.95

INNOVA (INN)

	Reg	Sale
06-1101 DC power pack, 12v, 6.5 amp/hour	$ 63.43	49.95
06-9509 AC/DC adapter	14.25	9.95

J-COM (JCO)

	Reg	Sale
HB12 HamBase 1.2 5¼" IBM U.S. hams data	$ 54.95	49.95
HB144 HamBase 1.44 3½" IBM U.S. hams data	54.95	49.95
VQ Ventriloquist voice keyer, in enclosure	154.95	149.95
Battery enclosure	9.95	
VQPCB Ventriloquist PC board only	134.95	129.95

JPS (JPS)

	Reg	Sale
NF-60 Auto DSP audio spectral notch filter	$160.00	
NIR-10 Dlx noise/notch DSP bandpass filter	349.95	

JRC (JRC)

	Reg	Sale
NRD-535D HF receiver	2029.00	1748
NRD-525 HF receiver .....D	990.00	929.95
JST-135HP Deluxe model transceiver	3049.00	2598

Note: The JST-135HP includes the following items: CDD-366, CFL-233, CFL-243, CGD-135, CMF-78, CMH-742, NBD-520, NVT-58

	Reg	Sale
JST-135 Standard model transceiver	1739.00	1498
CCL-212 Tone squelch unit; JST-135/135HP	107.00	

JRC - continued

	Reg	Sale
CDD-366 Notch follow unit; JST-135	97.00	
CFL-218A 1.8 KHz crystal IF filter; all	154.00	
CFL-231 300 Hz crystal IF filter; all	154.00	
CFL-232 500 Hz crystal IF filter; all	154.00	
CFL-233 1 KHz crystal filter; all but 135HP	154.00	
CFL-243 Bandwidth control (BWC); JST-135	399.00	
CFL-251 2.4 KHz crystal IF filter; all	154.00	
CFQ-3003 Transceive cable set	122.00	
CGD-135 High stability TCXO; 135/535D	87.00	
CMF-78 ECSS unit; JST-135	264.00	
CMH-365 Extender board; all radios	132.00	
CMH-530 RTTY demodulator; NRD-525	118.00	
CMH-532 RS-232C interface; NRD-525	111.00	
CMH-741 RS-232C interface; 135/135HP	189.00	
CMH-742 Daughter board; JST-135	68.00	
CMK-165 VHF/UHF converter; NRD-525	416.00	
KY-3A CW straight key	118.00	
NBD-520 DC power supply; JST-135	399.00	
NFG-97 Antenna tuner; JST-135/135HP	348.00	
NFG-230 Auto antenna tuner; 135/135HP	717.00	
NVA-88 External speaker; all radios	65.00	
NVA-319 Deluxe external speaker; all	210.00	
NVT-56 Desk microphone; JST-135/135HP	104.00	
NVT-58 Hand microphone; JST-135	40.00	
ST-3 Deluxe headphones; all radios	77.00	
6ZCJD00139 RTTY printer cable; NRD-525	68.00	
6ZCJD00140 RS-232C interface cbl; 525	68.00	
6ZCJD00350 RS-232C interface cbl; 535D	68.00	
JRL-2000F 160-12m HF linear	4899.00	3998
CFQ-3889 General purpose control cable	49.00	
CFQ-3890 JST-135 control cable	68.00	

JSC (JSC)

52 OHM COAXIAL CABLE

JFA-08Q RG-8X (stranded, foam) Δmwv,per ft.	24¢
JFA-08Q .....Δwv, **100** ft. Roll	21.95
JFA-08Q .....Δwv, **500** ft. Roll	79.95
JFA-08Q .....Δv, **1000** ft. Roll	159.95
JPA-213 RG-213 (non-contam) ..Δmv, per ft.	51¢
JPA-213 .....Δmv, **100** ft. Roll	49.95
JPA-213 .....Δmv, **500** ft. Roll	219.95

ROTOR CABLE

JRR-420 4-wire; U-105/U-110 ...Δmw, per ft.	20¢
JRR-420 .....Δmw, **100** ft. Roll	16.95
JRR-420 .....Δmw, **500** ft. Roll	69.95
JRR-520 5-wire; AR-40 .....Δmw, per ft.	26¢
JRR-520 .....Δmw, **100** ft. Roll	22.95
JRR-520 .....Δmw, **500** ft. Roll	69.95
JRR-520 .....Δmw, **1000** ft. Roll	129.95

Note: All above roll pricing is for rolls as shown only; all other lengths, even if more than roll length shown or a multiple of roll length shown, are sold at the per ft. price only.

COAX ASSEMBLIES w/PL-259s

	Reg	Sale
JFB-58-12LP 12' RG-58U, PL-259 - lugs ...Dmwf	$ 6.99	4.95
JFB-58-20LP 20' RG-58U, PL-259 to lugs .Dmw	8.49	6.95
JFB-58-50PP 50' RG-58U .....Dm	11.49	
JFA-08Q-12LP 12' RG-8X, PL-259 - lugs Dmwfv	7.95	5.95
JFA-08Q-20LP 20' RG-8X, PL-259 to lugs ...Dmw	9.95	7.95

Also see Belden for cable

K-COM (KCO)

	Reg	Sale
RF-1 Modular telephone RFI filter	$ 16.95	14.95
RF-1/2-line Two-line modular RFI filter	24.95	19.95
RF-2 Hard-wired telephone RFI filter	10.95	8.95

KLM (KLM)

ANTENNAS

	Reg	Sale
160V 160, 80 or 40m vertical, 24' high	$255.00	239.95
80M-1 80m rotatable dipole, 90' long .....*T	837.00	699.95
80M-1R 80m rotatable dipole w/relays .....*T	1176.00	999.95
80M-2 80m 2 el beam, 36' boom, 4 db .....*T	2757.00	2369
80M-2R 80m 2 el beam w/relays .....*T	3410.00	2899
80M-3 80m 3 el beam, 60' boom, 7 db .....*T	4564.00	3998
80M-3R 80m 3 el beam w/relays .....*T	5442.00	4899
SSV-80-40-15 80/40/15m vert, 65' high ...*T	819.00	699.95
6-12-8LPA 6-12 MHz 8el LP, 36' boom .....*T	2299.00	1969
Heavy duty boom only for 6-12-8LPA .....*T	467.00	419.95
6-12-8LPA w/Heavy duty boom .....*T	2482.00	2169
6-30-15LPA 6-30 MHz 15el LP, 46' boom ...*T	3427.00	2889

KLM - continued

	Reg	Sale
7.2/10-30-LPA 7,10-30MHz 8 el, 42' bm ...*T	1262.00	**1129**
Heavy duty boom only for **7.2/10-30**-LPA .*T	432.00	**399.95**
7.2/10-30-LPA w/heavy duty boom .....*T	1664.00	**1499**
40M-1 40m rotatable dipole, 46.5' boom .....T	221.00	**199.95**
40M-2 40m 2 el beam, 16' boom, 4.9 db ...*T	542.00	**469.95**
40M-3 40m 3 el beam, 32' boom, 6.5 db ...*T	741.00	**669.95**
Heavy duty boom only for **40M-3** .....*T	320.00	**299.95**
40M-3 w/heavy duty boom .....*T	956.00	**879.95**
40M-4 40m 4 el beam, 42' boom, 7.2 db ...*T	1028.00	**879.95**
Heavy duty boom only for **40M-4** .....*T	432.00	**399.95**
40M-4 w/heavy duty boom .....*T	1350.00	**1229**
40-10V 40/20/15/10m 26.5' vertical	297.00	**269.95**
10-30-7LPA 10-30MHz 7el LP, 30' bm, 7db *T	1070.00	**899.95**
Heavy duty boom only for **10-30-7LPA** .....*T	322.00	**299.95**
10-30-7LPA w/heavy duty boom .....*T	1518.00	**1369**
SK-8 Conv kit for 10-30 log w/o 40m dipole *T	289.00	**269.95**
SK-8/40M Conv kit for 10-30 log w/40m dipole .*T	434.00	**379.95**
KT-31 20-15-10m 24.5' rotatable dipole	269.00	**249.95**
KT-34A 20-15-10m, 4 el, 16' boom, 7 db	533.00	**479.95**
KT-34X Upgrade kit - KT-34A to XA .....T	283.00	**259.95**
KT-34XA 20-15-10m, 6 el, 32' boom, 9 db ...T	766.00	**689.95**
Heavy duty boom only for **KT-34XA** .....*T	325.00	**299.95**
KT-34XA w/heavy duty boom .....*T	949.00	**869.95**
20M-4 20m 4 el beam, 21' boom, 7.7 db ...*T	459.00	**399.95**
20M-5 20m 5 el beam, 42' boom, 9.7 db ...*T	710.00	**599.95**
Heavy duty boom only for **20M-5** .....*T	432.00	**399.95**
20M-5 w/heavy duty boom .....*T	1060.00	**899.95**
20M-6 20m 6 el beam, 57' boom, 11 db ....*T	1022.00	**879.95**
Heavy duty boom only for **20M-6** .....*T	571.00	**519.95**
20M-6 w/heavy duty boom .....*T	1377.00	**1229**
20-30-6LPA 20-30MHz, 6el LP, 19'bm, 7db *T	365.00	**329.95**
17M-3 17m 3el beam, 16.75' boom, 6.5db *T	409.00	**349.95**
15M-4 15m 4 el beam, 14' boom, 7.7db ....*T	244.00	**229.95**
15M-6 15m 6 el beam, 36' boom, 10.5db ..*T	574.00	**499.95**
Heavy duty boom only for **15M-6** .....*T	351.00	**319.95**
15M-6 w/heavy duty boom .....*T	779.00	**699.95**
15M-6LD As 15M-6, but light duty .....*T	431.00	**379.95**
12-17-30D WARC tri-band dipole	269.00	**249.95**
12-17-30V WARC tri-band vertical	141.00	**129.95**
10M-4 10m 4 el beam, 10' boom, 7.7 db ..*w	223.00	**189.95**
10M-6 10m 6 el beam, 27.5' boom, 11 db *Tw	351.00	**299.95**
JV-10 10m 26' vertical antenna	113.00	**104.95**

Note: All KLM antennas supplied with a KLM balun/matching system, which is included in the price.

6M-5 6m 5 el beam, 11.75' boom, 9.7 db	221.00	**199.95**
6M-7LB 6m 7el beam, 25.75' bm, 11.5db ...T	322.00	**289.95**
6M-7LD 6m 7 el beam, 20' boom, 10.5 db	252.00	**229.95**
6M-10 6m 10 el beam, 34' boom, 11.7 db .*T	428.00	**389.95**
6M-14 6m 14 el beam, 61' boom, 14 db ....*T	593.00	**539.95**
JV-6 6m 15' vertical antenna, 3 db	120.00	**109.95**
2M-4X 2m 4 el rear mt beam, 4.2' bm, 8.5db	69.00	
2M-8 2m 8 el beam, 7.25' boom, 10.3 db	108.00	**99.95**
2M-11X 2m 11 el beam, 15.33' bm, 12.5 db .	92.00	**86.95**
2M-13LBA 2m 13 el beam, 21.5' bm, 13.3db	105.00	**99.95**
2M-14C 2m circ 14 el beam, 12.9' bm, 11db	179.00	**169.95**
2M-16LBX 2m 16el beam, 28'bm, 14.5db Dmwv	214.00	**179.95**
2M-16LBXM 2m 16 el beam, 28' boom, 14.5db .	214.00	**199.95**
2M-20LBX 2m 20 el beam, 38.5' boom	248.00	**224.95**
2M-22C 2m circ 22 el beam, 19' bm, 13 db ..	234.00	**199.95**
CJ-2M 2m 5' closed J antenna, 1.8db	39.00	
JV-2 2m 5' vertical antenna, 3 db .....†	123.00	**89.95**
JV-2X 2m 11' vertical antenna, 5 db .....†	168.00	**129.95**
220-7 220 7 el beam, 4.75' bm, 8.8 db	83.00	**74.95**
220-14X 220 14 el beam, 14.5' bm, 13.5db ..	120.00	**109.95**
220-22LBX 220 22el beam, 29.75'bm, 15.6db .	151.00	**139.95**
CJ-220 220 40" closed J antenna, 1.8 db	35.00	
JV-220X 220 7' vertical antenna, 5 db .....†	155.00	**119.95**
432-20LBX 432 20 el beam, 12.33'bm, 15.3db	160.00	**149.95**
432-30LBX 432 30 el beam, 22'bm, 17.3db ..	188.00	**169.95**
435-18C 432 circ 18 el beam, 7'bm, 12 db ...	235.00	**219.95**
435-40CX 432 circ 40 el beam, 14.5'bm, 15.2db .	255.00	**249.95**
440-6X 440 6 el beam, 2.33' boom, 8.9 db ...	60.00	**54.95**
440-10X 440 10 el beam, 5.33' bm, 11.2 db .	72.00	**69.95**
440-16X 440 16 el beam, 10.33'bm, 14.2db .	132.00	**119.95**
CJ-440 440 19" closed J antenna, 1.8 db	31.00	
1.2-15LBX 1.2 GHz 15 el beam	100.00	
1.2-24/25LBX 1.2 GHz 24/25 el beam	121.00	**114.95**
1.2-44LBX 1.2GHz 44el beam, 12'bm, 18.2db	169.00	**159.95**
APS-1 Antenna polarity switcher w/ps	56.00	

KLM - continued

	Reg	Sale
CS-2 Extra 432 ant circularity switch	72.00	
STACKING FRAMEWORKS (Frameworks only)		
2Mx2 For 2 - 2m antennas .....Δw	$174.00	**39.95**
220x2 For 2 - 220 MHz antennas .....Δm	82.00	**19.95**
220x4 For 4 - 220 MHz antennas .....ΔTm	272.00	**49.95**
432x4 For 4 - 432 MHz antennas .....Δm	101.00	**24.95**
5' 1½" OD fiberglass mast	38.00	**34.95**
7-1/2' 1½" OD fiberglass mast	48.00	**42.95**
COUPLERS/POWER DIVIDERS		
440-2N 432 MHz - for 2 ants, w/type N	$ 81.00	**74.95**
440-4N 432 MHz - for 4 ants, w/type N	90.00	**82.95**
FERRITE BALUNS		
3-60-1:1 3-60 MHx 4kw PEP 1:1 balun	$ 63.00	**59.95**
3-60-4:1 3-60 MHz 5kw PEP 4:1 balun	90.00	**84.95**
50-150-1:1 50-150 MHz 500w PEP 1:1 balun .	53.00	**49.95**
50-150-4:1 50-150 MHz 500w PEP 4:1 balun .	78.00	**72.95**
1/4 WAVE SLEEVE BALUNS		
2M-50N 2m 1:1 type N balun .....Δmw	$ 60.00	**29.95**
220-50N 220 MHz 1:1 type N balun .....Δmv	58.00	**29.95**

***These antennas are drop-shipped (shipped direct to you from the KLM factory). On these factory drop-shipments we prefer payment in full with order, however, we will accept your credit card with the understanding that we will process the charge when we order the merchandise from the factory. This means that you may be billed before you receive your drop-shipped merchandise. Shipment is FOB Morgan Hill, California via truck, COD for freight charges only. Freight charges will be collected upon delivery by the carrier. Please allow sufficient time for delivery on these special order antennas.**

KANTRONICS (KAN)

DVR 2-2 2w 2m data/voice radio	$219.95	**199.95**
D4-10 10w 440 MHz data radio	369.95	**349.95**
Data Engine TNC w/no modems	309.95	**289.95**
Data Engine w/DE-1200 modem	369.95	**349.95**
DE-1200 1200 baud modem	79.95	
DE-9600 9600 baud modem .....Dw	99.00	**79.95**
DE-19K2/9K6 19,200/9600 baud modem ...	99.95	
Host Master II+ IBM software; Data Engine .	64.95	
KPC-2 Packet Communicator II controller/ps	169.95	**159.95**
KPC-3 Small packet TNC	119.95	
KAM All Mode Communicator w/ps	319.95	**289.95**
Host Master 64 Software for C-64/128	49.95	
Host Master II+ IBM software	64.95	
KPC-4 Dual port VHF packet Communicator ..	279.95	**269.95**
KM-2400 2400 BPS board; KAM/KPC-4 ..... Dwv	79.95	**59.95**
KPC-2400 High speed packet unit w/ps Dmw	279.95	**249.95**
TNC-2400 2400 baud modem; all TNCs ..... Dmv	79.95	**59.95**
PC Starter Pack Software for IBM .....Dmw	25.00	**9.95**
PC Combo Software for IBM	49.95	
Host Master 64 Software for C-64/128	49.95	
Superfax II WX FAX program for IBM	39.95	
WeFaxWorks HF WX FAX prog; MacIntosh ..	39.95	
KTU Weathernode remote WX unit/temp sens	299.95	**289.95**
Anemometer Wind speed sensor	109.95	
Rain gauge	89.95	
BOOKS		
KPC/KAM Manual Set	$ 24.95	
MS-DOS Introduction	4.95	
Using the MBL Mailbox	4.95	
Using the RLI Mailbox	4.95	

KENWOOD (KEN)

TS-950S 9-band Xcvr/.1-30 MHz Rcvr/ps Dmv	3299.95	**2498**
DSP-10 Digital signal processor .....Δmv	599.95	**499.95**
YG-455S-1 2.4 KHz SSB filt (2nd IF) .Δmwv	149.95	**119.95**
TS-950SD Xcvr w/DSP/SO-2/4 filts ....Dmwfcv	4399.95	**2998**
TS-950SDX Dlx Xcvr w/keyer/DSP/filters	4499.95	**3698**
DRU-2 Digital recording unit; 950SDX	121.95	**114.95**
MC-43S Extra 8-pin hand mic w/up-down ..	47.95	
MC-60A 8-pin amp desk mic w/up-down ...	130.95	**124.95**
MC-80 8-pin electret desk mic w/up-down .	83.95	**79.95**
MC-85 Multi-function 8-pin elect desk mic .	141.95	**129.95**
MC-90 2-head DSP desk microphone	220.00	**199.95**
SM-230 Station monitor w/pan display	999.95	**899.95**
SP-950 External spkr w/audio filters	109.95	**99.95**
VS-2 Voice synthesizer	62.95	
YK-88CN-1* 270 Hz CW filter (1st IF)	84.95	
*Replaces YK-88C-1 500 Hz filter on SD		
YK-88SN-1 1.8 KHz SSB filter (1st IF)	84.95	
TS-850S 9-band Xcvr/.1-30 MHz Rcvr/mic ..†	1799.95	**1499**
AT-850 Internal auto antenna tuner	205.95	**189.95**

KENWOOD - continued

	Reg	Sale
TS-850S/AT 9-band Xcvr/.1-30 MHz Rcvr/tuner ...	1999.95	**1698**
AT-300 External auto antenna tuner	589.95	**529.95**
DRU-2 Digital recording unit	121.95	**114.95**
DSP-100 External digital signal processor .	629.95	**569.95**
IF-232C Level translator	98.95	
MC-43S Extra 8-pin hand mic w/up-down ..	47.95	
MC-60A 8-pin amp desk mic w/up-down ...	130.95	**124.95**
MC-80 8-pin electret desk mic w/up-down .	83.95	**79.95**
MC-85 Multi-function 8-pin elect desk mic .	141.95	**129.95**
MC-90 2-head DSP desk microphone	220.00	**199.95**
PG-2X Heavy duty extra DC cable	24.95	
PS-52 Heavy duty power supply	259.95	**239.95**
RM-1 Remote control unit	49.95	
SM-230 Station monitor w/pan display	999.95	**899.95**
SO-2 TCXO unit	149.95	**139.95**
SP-31 External speaker	79.95	
VS-2 Voice synthesizer	62.95	
YG-455C-1 500 Hz CW filter (2nd IF)	149.95	**139.95**
YG-455CN-1 250 Hz CW filter (2nd IF)	159.95	**149.95**
YK-88C-1 500 Hz CW filter (1st IF)	98.95	
YK-88CN-1 270 Hz CW filter (1st IF)	84.95	
YK-88SN-1 1.8 KHz SSB filter (1st IF)	84.95	
AT-940 Automatic ant tuner; TS-940S ..Dmwv	246.95	**149.95**
IF-10B Computer interface; TS-940S ....Δmfv	67.95	
SO-1 Comm stability TCXO; TS-940S ...Δmwf	236.95	**169.95**
TS-450S 9-band Xcvr/SW Rcvr/mic .....†	1349.95	**1078**
TS-690S 9-band Xcvr w/6m/SW Rcvr/mic	1549.95	**1298**
AT-450 Internal 80-10m auto tuner	205.95	**189.95**
TS-450S/AT 9-band Xcvr/SW Rcvr/tuner/mic †	1549.95	**1229**

Kenwood Coupon Offer

$50 Off TS-450S//TS-450S/AT until 12/31/92

NOTE: TS-450S//TS-450S/AT prices reflect a special deal from Kenwood, which ended 9/30/92. AES bought lots & will continue the specials as long as we can. Prices subject to change without notice; please check with salesperson when ordering.

AT-300 External auto antenna tuner	589.95	**529.95**
DSP-100 External digital signal processor .	629.95	**569.95**
IF-232C Level translator	98.95	
MB-430 Mobile mounting bracket	36.95	
MC-43S Extra 8-pin hand mic w/up-down ..	47.95	
MC-60A 8-pin amp desk mic w/up-down ...	130.95	**124.95**
MC-80 8-pin electret desk mic w/up-down .	83.95	**79.95**
MC-85 Multi-function 8-pin elect desk mic .	141.95	**129.95**
PG-2X Heavy duty extra DC cable	24.95	
PS-33 Light duty 20.5A power supply	229.95	**209.95**
PS-53 Heavy duty 22.5A power supply	240.95	**219.95**
SO-2 TCXO unit	149.95	**139.95**
SP-23 External speaker	69.95	
TU-8 CTCSS tone unit	40.95	
VS-2 Voice synthesizer	62.95	
YG-455C-1 500 Hz CW filter (2nd IF)	149.95	**139.95**
YG-455CN-1 250 Hz CW filter (2nd IF)	159.95	**149.95**
YK-88C-1 500 Hz CW filter (1st IF)	98.95	
YK-88CN-1 270 Hz CW filter (1st IF)	84.95	
YK-88S-1 2.4 KHz SSB filter (1st IF)	88.95	
YK-88SN-1 1.8 KHz SSB filter (1st IF)	84.95	
TS-140S 9-band Xcvr/.5-30 MHz Rcvr/mic	949.95	**819.95**
IF-10C Computer interface unit	51.95	
IF-232C Level translator	98.95	
MB-430 Mobile mounting bracket	36.95	
MC-43S Extra 8-pin hand mic w/up-down ..	47.95	
MC-60A 8-pin amp desk mic w/up-down ...	130.95	**124.95**
MC-80 8-pin electret desk mic w/up-down .	83.95	**79.95**
MC-85 Multi-function 8-pin elect desk mic .	141.95	**129.95**
PS-50 Heavy duty power supply	249.95	**229.95**
SP-23 External speaker	69.95	
TU-8 CTCSS tone unit	40.95	
YG-455C-1 500 Hz CW filter	149.95	**139.95**

MasterCard VISA DISCOVER Use your CREDIT CARD AMERICAN EXPRESS

KENWOOD - continued

	Reg	Sale
YK-455C-1 500 Hz CW filter	98.95	
TL-922A 2kw PEP linear (3-500Zs) ....A	1982.95	**1698**
R-5000 100 KHz-30 MHz digital receiver	1099.95	**879.95**
DCK-2 DC cable kit w/cig plug	12.95	
IC-10 IC kit for computer control	36.95	
IF-232C Level translator	98.95	
MB-430 Mobile mounting bracket	36.95	
SP-23 External speaker	69.95	
VC-20 108-174 MHz VHF converter	214.95	**199.95**
VS-1 Voice synthesizer	62.95	
YK-88A-1 AM filter	88.95	
YK-88C 500 Hz CW filter	88.95	
YK-88CN 270 Hz CW filter	88.95	
YK-88S 2.4 KHz SSB filter	88.95	
YK-88SN 1.8 KHz SSB filter	88.95	
R-2000 150 KHz-30 MHz digital receiver	799.95	**649.95**
DCK-1 DC cable kit; R-2000/1000/600	9.95	
VC-10 118-174 MHz VHF converter	204.95	**189.95**
YG-455C 500 Hz CW filter	129.95	**119.95**
YG-455CN 250 Hz CW filter ....†	149.95	**139.95**
RZ-1 500KHz-905MHz AM/FM 12vdc scan Rcvr	599.95	**499.95**
HS-5 Deluxe headphones	67.95	
HS-6 Lightweight headphones	47.95	
HW-3 Version 2.2 3½" HamWindows IBM soft	139.95	
HW-5 Version 2.2 5¼" HamWindows IBM soft	139.95	
LF-30A 1kw PEP low pass filter	47.95	
MA-5 5-band 200w PEP HF mobile antenna	146.95	**129.95**
VP-1 Hvy duty chrome spg, bpr mt for MA-5	55.95	
MC-30S 4-pin lo-Z dynamic mobile mic Dmw	46.95	
MC-35S 4-pin hi-Z dynamic mobile mic	46.95	
MC-43S 8-pin hand mic w/up-down switch	47.95	
MC-50 4-pin hi/lo-Z desk microphone	77.95	
MC-60A 8-pin amp desk mic w/up-down	130.95	**124.95**
MC-80 8-pin electret desk mic w/up-down	83.95	**79.95**
MC-85 Multi-function 8-pin electret desk mic	141.95	**129.95**
MJ-46 4-pin mic to 6-pin Xcvr adaptor	14.95	
MJ-48 4-pin mic to 8-pin Xcvr adaptor	14.95	
MJ-64 6-pin mic to 4-pin Xcvr adaptor Dmwv	14.95	**12.95**
MJ-68 6-pin mic to 8-pin Xcvr adaptor	14.95	
MJ-84 8-pin mic to 4-pin Xcvr adaptor	14.95	
MJ-86 8-pin mic to 6-pin Xcvr adaptor	14.95	
PG-4A Adapt cord; MC-60A to 4-pin Xcvr	21.95	
PG-4B Adapt cord; MC-60A - 6-pin Xcvr Dmfv	21.95	**19.95**
PG-4C Adapt cord; MC-60A to 8-pin Xcvr	21.95	
PG-4D Adapt cord; MC-85 to 4-pin Xcvr	21.95	
PG-4E Adapt cord; MC-85 to 6-pin Xcvr	21.95	
PG-4F Adapt cord; MC-85 to 8-pin Xcvr	21.95	
PC-1A 8-pin phone patch	109.95	**99.95**
PG-3B 15A DC line noise filter	22.95	
PG-3G 25A DC line noise filter	40.00	
SP-41 Compact external speaker	36.95	
SP-50B High quality external mobile speaker	41.95	
SW-2100 1.8-30MHz 2kw SWR/power meter	149.95	**139.95**
TU-79 Prog encoder; TR-7930/7950 v	54.95	
TR-751A 25w 2m SSB/FM Xcvr w/TTP mic	669.95	**599.95**
CD-10 Call sign display ....D*	119.95	**49.95**
TU-7 Programmable encoder	40.95	
VS-1 Voice synthesizer	62.95	
IF-10A Computer interface; TS-711A ....Δ	67.95	
PG-2U DC cable; TS-711A ....Δ	12.95	
TU-5 Programmable encoder; TS-711A ....Δ	50.95	
TS-790A 45w 2m/40w 440 SSB/FM Xcvr ....†	1999.95	**1699**
IF-232C Level translator	98.95	
MC-43S Extra 8-pin hand mic w/up-down	47.95	
MC-60A 8-pin amp desk mic w/up-down	130.95	**124.95**
MC-80 8-pin electret desk mic w/up-down	83.95	**79.95**
MC-85 Multi-function 8-pin elect desk mic	141.95	**129.95**
PS-31 Power supply	199.95	**179.95**
SP-31 External speaker	79.95	
TSU-5 Programmable CTCSS decoder	50.95	
UT-10 10w 1.2 GHz module	539.95	**489.95**
VS-2 Voice synthesizer	62.95	
MB-4000 Mobile mount; TW-4000A ....Dm	17.95	**4.95**
TU-4C Prog encoder; TW-4000A ....Dmw	65.95	**19.95**
TM-641A 50w 2m/25w 220 FM Xcvr/TTP	849.95	**729.95**
TM-741A 50w 2m/35w 440 FM Xcvr/TTP ....†	849.95	**699.95**
DTU-2 Digital paging unit	23.95	
MJ-88 Modular to 8-pin mic adapter	22.95	

KENWOOD - continued

	Reg	Sale
PG-4K 13' remote cable kit	45.95	
PG-4L 23' remote cable kit	74.95	
TSU-7 CTCSS decoder unit	49.95	
UT-28S 50w 10m unit	299.95	**269.95**
UT-50S 50w 6m unit	299.95	**269.95**
UT-220S 25w 220 MHz unit for 741A	299.95	**269.95**
UT-440S 35w 440 MHz unit for 641A	299.95	**269.95**
UT-1200 10w 1.2 GHz unit	399.95	**359.95**
TM-631A 50/25w 2m/220 FM Xcvr w/TTP	749.95	**649.95**
RC-10 Remote controller handset	240.95	**219.95**
KQT-8/TSU-6 Prog CTCSS decoder	46.95	
TM-732A 50/35w 2m/440 FM Xcvr w/TTP	749.95	**649.95**

Kenwood Coupon Offer
$25 Off TM-732A until 11/30/92

PG-4K 13' remote cable kit	45.95	
PG-4L 23' remote cable kit	74.95	
TSU-7 CTCSS decoder unit	49.95	
MA-700 3db 2m/5.5db 440 ant w/duplexer	78.95	
Larsen **PO-K** Roof mt, coax; MA-700	23.00	
Larsen **PO-MM** Magnet mt, coax; MA-700	28.75	
Larsen **PO-TLM** Trunk lip mt, coax; MA-700	24.70	
TM-241A 50w 2m FM Xcvr w/TTP mic ....†	459.95	**349.95**
TM-331A 25w 220 FM Xcvr w/TTP mic	469.95	**399.95**
TM-441A 35w 440 FM Xcvr w/TTP mic	479.95	**419.95**
TM-541A 10w 1.2GHz FM Xcvr w/TTP mic	579.95	**499.95**
DRU-1 Digital recorder	121.95	**114.95**
DTU-2 Digital paging unit	23.95	
IF-20 Interface for 4 Xcvrs ....Dmwf	129.95	**109.95**
PG-4H Interface connecting cable ....D	14.95	
PG-4J Extension cable kit	45.95	
PG-4G Extra control cable for full duplex	21.95	
RC-10 Remote controller handset	240.95	**219.95**
RC-20 Full-function rem control head ....Dv	129.95	**119.95**
KQT-8/TSU-6 Prog CTCSS decoder	46.95	

AES Kenwood K-Bux

Until 11/30/92 you can buy the amount of New KENWOOD Merchandise shown in the left column at our Regular Low Sale Prices, and take the Special Credit shown in the right column. (In addition to Kenwood's coupons!)

$400 to $599.99 ..... $10
$600 to $799.99 ..... $20
$800 to $999.99 ..... $30
$1000 to $1199.99 .... $40
$1200 & up $50

TR-851A 25w 430-440 MHz SSB/FM Xcvr	771.95	**679.95**
CD-10 Call sign display ....D*	119.95	**49.95**
TU-7 Programmable encoder	40.95	
VS-1 Voice synthesizer	62.95	
MB-3 Mobile mtg bkt for TR-50 ....Dmw	29.95	**2.95**
PB-16 Extra battery for TR-50 ....Dmw	44.95	**9.95**
SC-10 Soft case for TR-50 ....Dmw	44.95	**2.95**
MC-44 8-pin mobile mic w/up-down ....Dmfv	39.95	**19.95**
MC-48B Up-down 8-pin TTP microphone	70.95	
PS-50 Heavy duty power supply	249.95	**229.95**
TH-225A 5w 2m FM HT/batt/cgr/TTP	399.95	**349.95**
TH-315A 2.5w 220 FM HT/batt/cgr/TTP	419.95	**369.95**

Accessories for TH-225A/315A/415A/205AT

BC-7 Desk rapid cgr for PB-1/2/3/4/12	$109.95	**104.95**
KSC-6/BC-8 Desk cgr for PB-1/2/3/4/12	27.50	
BH-5 Swivel mount ....Dmw	29.95	**9.95**
HMC-2 VOX/boom mic headset	57.95	
LH-5 Leather case for PB-1/4 ....Dm	54.95	
MB-4 Mobile bracket	17.95	
PB-1 800ma 12v (5w) battery	82.95	
PB-3 800ma 7.2v (1.5w) battery ....D	62.95	**59.95**
KNB-4/PB-4 1600ma 7.2v (1.5w) battery	76.95	
PB-12 Extra 500ma 12v (5w) batt; 225A	64.95	
PG-2V Extra DC cable	9.95	
PG-3E Cig cord w/filter	25.95	
RA-3 2m BNC ⅜ wave telescopic antenna	19.95	

KENWOOD - continued

	Reg	Sale
RA-5 2m ¼ wv/440 ⅝ wv BNC telescopic ant	24.95	
RA-9B 220 BNC stubby duck	16.95	
SC-13 Soft case for PB-1/4 ....Df	19.50	
SC-27 Soft case for PB-12; 225A	19.50	
SMC-31 Speaker/mic w/right angle plug	52.95	
SMC-32 Mini water resistant rt angle spkr/mic	35.95	
TSU-3 Encoder/decoder for TH-205AT	45.95	
TSU-4 Decoder for TH-225A/315A/415A	45.95	
VB-2530 2m 25w amp; TH-205AT	128.95	
KWR-1/WR-1 Water resistant bag	22.00	
TH-55AT 1w 1.2 GHz FM HT/batt/cgr/TTP	524.95	**449.95**

Accessories for TH-77A/45AT/55AT/25AT

BC-2 Wall charger for PB-10	$ 22.95	
KSC-8/BC-10 Compact charger	38.95	
KSC-7/BC-11 Rapid charger	99.95	
BH-6 Swivel mount	29.95	
BT-6 6-AA battery case	22.95	
BT-7 4-AA battery case ....Dmwfv	19.95	**14.95**
DC-1 DC adapter	25.95	
PG-2V DC cable for DC-1	9.95	
PG-3E Cig cord w/filter for DC-1	25.95	
DC-4 Mobile charger for PB-10	19.95	
KVC-1/DC-5 Mobile cgr for PB-6/7/9	33.95	
HB-2 Wrist strap	12.95	
HMC-2 VOX/boom mic headset	57.95	
PB-5 200ma 7.2v (2.5/2w) battery ....Dmfv	57.95	**49.95**
KNB-5/PB-6 Extra 600ma 7.2v battery ....D	50.95	
KNB-5A 800ma 7.2v battery	58.95	
KNB-6A 1600ma 7.2v (2.5/2w) battery	97.50	
KNB-7/PB-8 600ma 12v (5w) batt (no 55AT) ... D	68.95	
KNB-7A 800ma 12v (5w) batt (not 55AT)	76.95	
PB-9 600ma 7.2v (2.5/2w) batt w/built-in cgr D*	67.95	**29.95**
PB-10* 600ma 7.2v battery ....D*	49.95	**29.95**
*Not for use with BC-10 or 11		
PB-11 600ma 12v (5w) or 1200ma 6v (2w) batt	79.95	
PG-2W DC cable w/fuse	9.95	
PG-3E Cig cord w/filter; 25/45/55AT	25.95	
KLF-3/PG-3F Cig cord w/filter; 77A	23.50	
RA-3 2m BNC ⅜ wave telescopic antenna	19.95	
RA-5 2m ¼ wv/440 ⅝ wv BNC telescopic ant	24.95	
SC-14 Soft case for PB-5; 25/45AT ....Dmwfv	25.95	**9.95**
SC-16 Soft case for PB-7/8/9; 25/45AT ....Dfv	25.95	**14.95**
SC-17 Soft case for PB-5 w/55AT	22.95	
SC-18 Soft case for PB-6/BT-6 w/55AT	22.95	
SC-19 Soft case for PB-7/8 w/55AT	22.95	
SC-23 Soft case for PB-8 w/75A ....Δwv	29.95	**16.95**
SC-28 Soft case for PB-5/6/10/BT-6 w/77A	19.95	
SC-29 Soft case for PB-7/8/9 w/77A	19.95	
SMC-31 Speaker/mic w/right angle plug	52.95	
SMC-32 Mini water resistant rt angle spkr/mic	35.95	
SMC-33 Speaker/mic w/remote control	49.95	
SMC-34 Spkr/mic w/vol cont & function keys	53.95	
KQT-8/TSU-6 CTCSS encoder/decoder	46.95	
VB-50 10w amplifier for TH-55AT ....†m	369.95	**299.95**
KWR-1/WR-1 Water resistant bag	22.00	
TH-46AT 2w 440 FM HT/batt/cgr/TTP	399.95	**349.95**

Accessories for TH-26AT/46AT

SC-24 Soft case for PB-5/BT-7 ....Dmwfv	$ 22.95	**19.95**
SC-25 Soft case for PB-6/10/BT-6 ....Dwv	22.95	**19.95**
SC-26 Soft case for PB-7/8/9	22.95	
TH-27A 2.5w 2m FM HT/batt/cgr/TTP ....D*	419.95	**299.95**
TH-47A 1.5w 440 FM HT/batt/cgr/TTP ....D*	429.95	**299.95**

Accessories for TH-27A/47A

BC-14 Extra wall charger for PB-13	$ 19.95	
BC-15 Rapid charger for PB-13/14 ....Δw	89.95	
BC-15A Rapid charger for PB-13/14/17/18	99.95	
BH-6 Swivel mount	29.95	
BT-8 AA alkaline battery case	19.95	
HB-2 Wrist strap	12.95	
HMC-2 VOX/boom mic headset	57.95	
PB-13 Extra 700ma 7.2v battery	54.95	
PB-14 300ma 12v (5w) battery	79.95	
PB-17 700ma 12v (5w) battery	89.95	
PB-18 1100ma 7.2v battery	79.95	
PG-2W DC cable w/fuse	9.95	
KLF-3/PG-3F Cig cord w/filter	23.50	
PG-3H Cig lighter cord w/filter	23.50	
SC-30 Soft case for PB-13	19.95	
SC-32 Soft case for PB-14	21.95	

KENWOOD - continued

	Reg	Sale
SMC-31 Speaker/mic w/right angle plug	52.95	
SMC-32 Mini water resistant rt angle spkr/mic	35.95	
SMC-33 Speaker/mic w/remote control	49.95	
SMC-34 Spkr/mic w/vol cont & function keys	53.95	
WR-2 Water resistant bag	22.95	
TH-28A 2.5w 2m FM HT/batt/cgr/TTP †	389.95	319.95
TH-48A 2w 440 FM HT/batt/cgr/TTP	419.95	369.95
TH-78A 2.5/2w 2m/440 FM HT/batt/cgr/TTP	599.95	519.95

Kenwood Coupon Offer
$25 Off on TH-78A until 12/31/92

Accessories for TH-28A/48A/78A

BC-15A Rapid charger for PB-13/14/17/18	$ 99.95	
BH-6 Swivel mount	29.95	
BT-8 AA alkaline battery case	19.95	
HB-2 Wrist strap	12.95	
HMC-2 VOX/boom mic headset	57.95	
ME-1 Memory expansion	23.50	
PB-13 700ma 7.2v battery	54.95	
PB-14 300ma 12v (5w) battery	79.95	
PB-17 700ma 12v (5w) battery	89.95	
PB-18 1100ma 7.2v battery	79.95	
PG-2W DC cable w/fuse	9.95	
KLF-3/PG-3F Cig cord w/filter	23.50	
PG-3H Cig lighter cord w/filter	23.50	
SC-33 Small soft case; 28A/48A	19.95	
SC-34 Large soft case; 28A/48A	21.95	
SC-35 Regular soft case; 78A	19.95	
SC-36 Large soft case; 78A	21.95	
SMC-31 Speaker/mic w/right angle plug	52.95	
SMC-32 Mini water resistant rt angle spkr/mic	35.95	
SMC-33 Speaker/mic w/remote control	49.95	
SMC-34 Spkr/mic w/vol cont & function keys	53.95	
WR-2 Water resistant bag	22.95	

Accessories: TH-A/B/2600A/3600A/2500/3500

AJ-3 Thread-loc to BNC adapter; TH-A/B	$ 11.95	
BC-2 Wall charger for PB-21H	22.95	
BC-6 2-pack quick cgr for PB-21/21H ....Dmf	104.95	49.95
BT-2 Alkaline battery case for TH-A/B	17.95	
CD-10 Call sign display; 2600A/3600A .....D*	119.95	49.95
EB-2 External C alkaline batt case; TH-A/B	22.95	
EB-3 External C alk batt case; 2600A/3600A .....D	24.95	
HMC-1 VOX headset; 2600A/TH-A/B ...Dmwfv	57.95	39.95
MS-1 Mobile stand/cgr/ps; 26/3600A/2500 .Dmwfc	67.95	49.95
PB-21 Extra 180ma battery for TH-A/B	26.95	
PB-21H* 500ma battery for TH-A/B	45.95	
*BC-2 or 6 required to charge PB-21H		
PB-25 Extra 400ma batt; 2500/3500	57.95	
PB-26 Extra 450ma batt; 2600A/3600A	57.95	
RA-3 2m BNC ⅜ wave telescopic antenna	19.95	
RA-5 2m ¼ wv/440 ⅝ wv BNC telescopic ant	24.95	
RA-6 Extra helical ant; 21A/AT/BT .....Dmv	14.95	4.95
RA-7 Extra flex ant; 41A/AT/BT .....Dmwfv	14.95	2.95
RA-8A 2m stubby duck for TH-A/B .....Dmf	14.95	4.95
RA-9B 220 BNC stubby duck	16.95	
RA-10B 440 BNC stubby duck .....Dm	16.95	12.95
SC-9 Soft case w/belt hook; 26/3600A .....Dm	37.95	6.95
ST-2 Desk quick cgr/ps; 26/3600A/25/3500	123.95	114.95
VB-2530 2m 25w amplifier	128.95	119.95
PB-24 Nicad batt w/cgr adapt; 2400	47.95	

LARSEN (LAR)

27-31 MHz ANTENNAS

NLA-27 10m ant only (no mount)	$ 37.25	34.95
NLA-27-K 10m ⅜" snap mt ant	49.75	44.95
NMO-27 10m ant only (no mount)	32.25	29.95
NMO-27-K 10m ¾" hole mt ant	45.25	40.95

47-54 MHz ANTENNAS

NLA-50 6m ant only (no mount)	$ 37.25	34.95
NLA-50-K 6m ⅜" snap mt ant	49.75	44.95

144-174 MHz ANTENNAS

NLA-150 2m ant only (no mount), 3 db	$ 34.70	32.95
NLA-150-K 2m ⅜" snap mt ant, 3 db	47.15	42.95
NLA-150-MM 2m magnetic mt ant, 3 db	63.45	57.95
NLA-150-TLM 2m trunk lid mt ant, 3 db	57.80	52.95
NLA-150-TMB 2m tnk gtr mt ant, 3 db	51.70	47.95
NMO-150 2m ant only (no mount), 3 db	29.40	26.95
NMO-150B 2m black ant only (no mt), 3 db	31.85	28.95

LARSEN - continued

	Reg	Sale
NMO-150-K 2m ¾" hole mt ant, 3 db	42.40	38.95
NMO-150-MM 2m magnetic mt ant, 3 db	58.15	52.95
NMO-150-TLM 2m trunk lid mt ant, 3 db	53.00	48.95
OM-150-K 2m no ground plane ant, 2 db	43.20	39.95

220-265 MHz ANTENNAS

NLA-220 220 ant only (no mount), 3 db	$ 34.70	32.95
NLA-220-K 220 ⅜" snap mt ant, 3 db	47.15	42.95
NLA-220-MM 220 magnetic mt ant, 3 db	63.45	57.95
NLA-220-TLM 220 trunk lid mt ant, 3 db	57.80	52.95
NLA-220-TMB 220 tnk gtr mt ant, 3 db	51.70	47.95
NMO-220 220 ant only (no mount), 3 db	29.40	26.95
NMO-220-K 220 ¾" hole mt ant, 3 db	42.40	38.95
NMO-220-MM 220 magnetic mt ant, 3 db	58.15	52.95
NMO-220-TLM 220 trunk lid mt ant, 3 db	53.00	48.95
OM-220-K 220 no gnd plane ant, 2 db	43.20	39.95

440-460 MHz ANTENNAS

NLA-440 440 ant only (no moung), 5 db	$ 33.20	29.95
NLA-440-K 440 ⅜" snap mt ant, 5 db	45.70	39.95
NLA-440-MM 440 magnetic mt ant, 5 db	61.95	56.95
NLA-440-TLM 440 trunk lid mt ant, 5 db	56.30	51.95
NLA-440-TMB 440 tnk gtr mt ant, 5 db	50.20	44.95
NMO-440 440 ant only (no mount), 5 db	28.15	25.95
NMO-440B 440 black ant only (no mt), 5 db	34.35	31.95
NMO-440-K 440 ¾" hole mt ant, 5 db	41.15	37.95
NMO-440-MM 440 magnetic mt ant, 5 db	56.90	51.95
NMO-440-TLM 440 trunk lid mt ant, 5 db	51.75	46.95
OM-440-K 440 no gnd plane ant, 2 db	51.20	46.95
NLA-2/70 2m/440 2-band ant (no mt), 2/4db	46.20	42.95
NLA-2/70-K 2m/440 ⅜" snap mt ant, 2/4db	58.65	52.95
NLA-2/70-MM 2m/440 mag mt ant, 2/4 db	74.95	68.95
NLA-2/70-TLM 2m/440 tnk lid mt ant, 2/4db	69.30	62.95
NMO-2/70 2m/440 2-band ant (no mt), 2/4db	45.00	39.95
NMO-2/70-K 2m/440 ¾" hole mt ant, 2/4db	58.00	52.95
NMO-2/70-MM 2m/440 mag mt ant, 2/4 db	73.75	66.95
NMO-2/70-TLM 2m/440 tnk lid mt ant, 2/4db	68.60	61.95
NLAQ 136-512 MHz ¼ wave ant (no mt)	9.10	
NLAQ-K 136-512 MHz ¼ wv ⅜" snap mt ant	21.60	
NMOQ-Spec 136-512 MHz ¼ wave ant (no mt)	9.35	
NMOQ-Spec-B 136-512 black ¼ wv ant (no mt)	12.60	
NMOQ-Spec-K 136-512MHz ¼ wv ¾" hole ant	22.35	
NMO-1290 1.2 GHz ant only (no mt)	29.20	26.95
BSA-150-K 2m base station antenna	70.20	59.95
BSA-220-K 220 base station antenna	70.20	59.95
BSA-440-K 440 base station antenna	70.20	59.95
FB1-136 Base station 136-230 MHz ant	132.50	119.95

ON GLASS ANTENNAS

KG-144-PL 2m 3 db on glass antenna	$ 58.85	52.95
KG-220-PL 220 3 db on glass antenna	58.85	52.95
KG-440-PL 440 2.4 db on glass antenna	47.00	42.95
KG-440-N 440 2.4 db type N on glass ant	51.00	46.95
KG-2/70-PL 2m/440 2.5/4.5db on glass ant	85.00	76.95
KG-Reinstall Reinstall kit for KG-ants	3.75	

KULDUCKIES - For Hand-helds

KD2-146 2m Kulduckie; Motorola MX	$ 11.50	
KD4-146 2m BNC Kulduckie	15.00	
KD4-2/70 2m/440 dual band Kulduckie	25.00	
KD4-222 220 BNC Kulduckie	15.00	
KD1-445 440 5/16-32 thread Kulduckie	11.50	
KD4-445 440 short BNC Kulduckie	15.00	
KD14-445 440 ¼ wave BNC Kulduckie	15.00	
KD4-146-HQ 2m part helical, part ¼ wave BNC	19.00	
KD14-2M-HW 2m ½ wave BNC antenna	32.50	
KD14-440-HW 440 ½ wave BNC antenna	32.50	

ACCESSORIES & REPLACEMENT PARTS

AD-2/70 100w 2m/440 duplexer	$ 63.70	56.95
ASC-161 ASP trunk mt, ⅜" hole	6.75	
BSA-K Base station mounting kit	36.35	
CRK NLA contact replacement kit	.60	
NLA-150-CO Extra coil for NLA-150	25.50	
NLA-220-CO Extra coil for NLA-220	25.50	
NLA-CAP Rain cap for NLA mount	2.20	
NLA-MM Magnet mt, coax for NLA ant	28.75	
NLA-TLM Trunk lip mt, coax for NLA ant	23.10	
NLA-B ⅜" snap mt only for NLA ant	4.25	
NLA-K ⅜" snap mt kit w/coax for NLA ant	12.50	
NMO-150-CO Extra coil for NMO-150	20.25	

LARSEN - continued

	Reg	Sale
NMO-150-BCO Extra black coil; NMO-150B	20.25	
NMO-220-CO Extra coil for NMO-220	20.25	
NMO-CAP Rain cap for NMO mount	2.20	
NMO-CAP-B Black rain cap for NMO mount	2.20	
NMO-MM Magnet mt, coax for NMO ant	28.75	
NMO-TLM Trunk lip mt, coax for NMO ant	23.60	
NMO-K ¾" hole mt w/coax for NMO ant	13.00	
RG-NLA Extra NLA rubber gaskets (3)	.95	
RG-NMO Extra NMO rubber gaskets (3)	.95	
SPRING Shock spring	5.75	
TMB-34 Trunk mtg bkt for NMO antenna	4.50	
TMB-34B Black trunk mtg bkt for NMO ant	6.50	
TMB-38 Trunk mtg bkt for NLA antenna	4.50	
TMB-OM Trunk gutter bkt for OM antenna	6.35	
W-154 Extra closed coil whip for 440 ant	17.20	
W-490 49" whip	9.20	
W-490B Black 49" whip	11.60	

MFJ ANTENNA TUNERS (MFJ)

989C Dlx 3kw PEP w/roller inductor	$349.95	299.95
986 3kw PEP w/roller inductor	289.95	259.95
962C 1.5kw PEP/meter/switch/balun	229.95	209.95
949E 300w/meter/dummy/sw/balun	149.95	134.95
948 300w/meter/switch/balun	129.95	119.95
941E 300w w/meter, switch, balun	109.95	99.95
945D 300w tuner w/meter	89.95	84.95
20 Mobile bracket for 945D	4.95	
901B Versa Tuner 200w ant tuner	59.95	
16010 200w random wire tuner	39.95	
910 80-10m mobile antenna matcher	19.95	
921 2m/220 300w PEP tuner/SWR/wattmeter	69.95	
924 440 MHz 300w PEP tuner/SWR/wattmeter	69.95	

MEMORY KEYERS

451 Dedicated CW keyboard w/memory	$ 89.95	84.95
486 Super Grandmaster memory keyer	189.95	169.95
77 Wired remote control for 486	19.95	
484C 12 25-char & 25-100 char messages D	149.95	134.95
75 Remote pad for 484C .....D	14.95	
482B 4 25-char or 50 & 2 25-char msgs	109.95	99.95
1312 12vdc adapter; 486/484C/482B	12.95	
490 492 keyer/Bencher paddle combination	164.95	149.95
490X 492 keyer for use w/Bencher or 564	109.95	99.95
564 Deluxe iambic paddle for 490X	49.95	
492 192 char menu driven memory keyer	99.95	89.95
80 8000 char memory expansion for 492	14.95	
492X Memory keyer w/8000 char expansion	114.95	104.95
78 Remote control for 492/492X	19.95	
493 32,000 char menu driven mem keyer	139.95	129.95
79 Remote control for 493	19.95	

ELECTRONIC KEYERS

407B Deluxe electronic keyer	$ 69.95	64.95
401B Econo keyer	49.95	
1305 5vdc power supply	12.95	

KEYER/PADDLES

422B Keyer/Bencher paddle combination	$134.95	124.95
422BX Keyer only	79.95	74.95
1305 5vdc power supply	12.95	
564 Deluxe iambic paddle for 422BX	49.95	

COMPUTER INTERFACES

1224 Interface	$ 99.95	94.95
1264 Tape software for VIC/C64; 1224	19.95	
1265 Disk software for VIC/C64; 1224	19.95	
1285 Software for IBM; 1224	19.95	
1225 Receive only interface	69.95	64.95
1264B Tape software for VIC/C64; 1225	19.95	
1265B Disk software for VIC/C64; 1225	19.95	
1285B Software for IBM; 1225	19.95	
1229 Dlx interface w/software; VIC/C64 ...Dm	179.95	99.95
1312 12vdc adapter	12.95	
1270B Packet radio TNC2	119.95	109.95
47A Mailbox 32K mem board; 1270B/1274	49.95	
47B Mailbox 128K mem board; 1270B/1274	69.95	
47C Mailbox 512K mem board; 1270B/1274	239.95	219.95
2400 2400 baud modem	89.95	
9600 9600 baud modem	109.95	104.95
1270BT Turbo packet w/2400 baud modem	209.95	189.95
1274 Packet radio controller	139.95	129.95
2400 2400 baud modem	89.95	
9600 9600 baud modem	109.95	104.95

MFJ - continued

	Reg	Sale
1274T Turbo controller w/2400 baud modem	229.95	209.95
1278 Multi-mode data controller	279.95	249.95
45A 32K RAM IC only	14.95	
45B 128K RAM IC only	34.95	
45C 512K RAM IC only	219.95	199.95
46A Mailbox 32K mem board for 1278	49.95	
46B Mailbox 128K mem board for 1278	69.95	
46C Mailbox 512K mem board for 1278	239.95	219.95
48 1278 upgrade	24.95	
48E 1278 packet encryption EPROM	29.95	
2400 2400 baud modem	89.95	
9600 9600 baud modem	109.95	104.95
1278T Turbo controller w/2400 baud modem	359.95	329.95
1282 C64 starter pack	24.95	
1282B Multicom package; C64/128	39.95	
1282BD Multicom 64 disk only	29.95	
1283 Tape software; C64 & VIC-20	24.95	
1284 5¼" IBM starter pack	24.95	
1284D 1284 disk only	14.95	
1284M 3½" IBM starter pack	24.95	
1284MD 1284M disk only	14.95	
1287 Macintosh starter pack	24.95	
1287B Mac multicom starter pack	59.95	
1287D 1287 disk only	14.95	
1287BD 1287B disk only	39.95	
1289 5¼" multicom software for IBM	59.95	
1289D 1289 disks only	49.95	
1289M 3½" multicom software for IBM	59.95	
1289MD 1289M disks only	49.95	
49 1289 color SSTV/print upgrade D	19.95	
49B 1289 color SSTV/print upgrade	24.95	
1290 Amiga multicom starter pack	49.95	
1290D 1290 disk only	39.95	
1214PC Multimode interface for IBM	149.95	139.95
1214AM Multimode interface for Amiga	149.95	139.95
40B TNC2 upgrade 32K/RAM	39.95	
40C TNC2 upgrade 32K	19.95	
40E TNC2 packet encryption EPROM	29.95	
43 Real time clock for TNC	29.95	
1271 Packet card for C64/128	49.95	
1272B TNC to microphone interface	34.95	
1272BX TNC/mic switch; PK-232	39.95	
1272BYH TNC/mic switch; KAM HF	39.95	
1272BYV TNC/mic switch; KAM VHF	39.95	
1272BZ TNC/mic switch; PK-88	39.95	
1273 Packet tuning indicator D	49.95	

SSB/CW FILTERS

752C Dual tunable SSB/CW filter	$ 99.95	94.95
722 SSB/CW notch filter	79.95	74.95

PHONE PATCH

624D Phone patch w/audio VU meter	$ 69.95	64.95

DUMMY LOADS

250 2kw PEP dummy load w/oil	$ 49.95	
250X 2kw PEP dummy load, less oil	29.95	
260B 300w 0-150 MHz dry dummy load	28.95	
260BN 300w 0-150 MHz type N dry dummy	34.95	
264 1.5kw 0-650 MHz dry dummy load	59.95	
264N 1.5kw 0-650 MHz type N dry dummy	69.95	

SWR/WATTMETERS

812B 14-170 MHz SWR/FS/wattmeter	$ 29.95	
815B 160-6m cross-needle SWR/wattmeter	69.95	
816 1.8-30 MHz toroidal SWR/wattmeter	29.95	
817 2m/440 cross needle meter	79.95	74.95
840 2m 5w wattmeter/dummy load for HT	19.95	
841 2m 5w in-line HT wattmeter/SWR	39.95	

SHORTWAVE ACCESSORIES

956 LW/MW/SW preselector/tuner	$ 39.95	
959B Receiver ant tuner w/preamp	89.95	
1020A .3-30 MHz indoor active rcv ant	79.95	
1022 300KHz-200MHz active rcv antenna	39.95	
1024 .05-30 MHz outdoor active rcv ant	129.95	119.95
1040B Deluxe receiver preselector	99.95	
1045B Receiver preselector	69.95	

ACCESSORIES

1305 5vdc adapter	$ 12.95	
1312 12vdc 300ma adapter, 2.5mm plug	12.95	
1312B 12vdc 300ma adapter, 2.1mm plug	12.95	
1315 12vdc 500ma adapter	14.95	

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	Reg	Sale
30 Golden Classics book	9.95	
31 Oscar book	7.95	
32 Packet Made Easy book	9.95	
33 Mobile Handbook book	12.95	
35 World of Ham Radio book	7.95	
36 Shortwave Listeners Guide; Apts/Condos	9.95	
37 Ham Communications Circuit Files book	9.95	
38 Easy-up Antennas book	16.95	
107B 24-hour digital clock	9.95	
108B 24/12-hour dual disp digital clock	19.95	
110 DX'ers world time clock D	24.95	
112 Deluxe world map clock	24.95	
202B RF noise bridge	59.95	
203 160-10m bandswitched dip meter	99.95	89.95
204B Antenna bridge	79.95	74.95
205 160-10m antenna resistance meter	89.95	84.95
206 Antenna current probe	79.95	74.95
207 160-10m SWR analyzer	79.95	74.95
208 2m SWR analyzer	79.95	74.95
209 1.8-170 MHz SWR analyzer	109.95	99.95
217 SWR analyzer, 30-50 MHz	79.95	74.95
218 SWR analyzer, 150-170 MHz	79.95	74.95
247 HF SWR analyzer/LCD counter	169.95	149.95
249 1.8-170 MHz SWR analyzer/LCD counter	199.95	179.95
280 Mobile compact speaker	19.95	
283 Speaker/mic, split jack; Alinco	24.95	
284 Speaker/mic; Icom/Yaesu/Alinco	24.95	
285 Mini spkr/mic; Icom/Yaesu/Alinco	24.95	
285L Mini spkr/mic L for Icom/Yaesu/Alinco	24.95	
285W Mini spkr/mic for Icom W2A	24.95	
286 Speaker mic; Kenwood	24.95	
287 Mini spkr/mic; Kenwood	24.95	
287L Mini spkr/mic L for Kenwood	24.95	
346 600 MHz LCD frequency counter	189.95	179.95
557 Deluxe code oscillator w/key	24.95	
701 Toroid RFI filters pack of 4	14.95	
704 1kw low-pass filter	39.95	
850 AC line voltage monitor	19.95	
912 W9INN remote balun	39.95	
931 Artificial ground unit	79.95	74.95
1112 Multiple DC outlet	29.95	
1116 Dlx multiple DC outlet	44.95	
1118 High current multiple DC outlet	64.95	
1202 Contest Connie voice keyer/interface	149.95	139.95
1266 C64 disk code tutor program	19.95	
1267 C64 cart code tutor program D	29.95	
76 1266/67 interface board; kyr/keyboard	19.95	
1268 IBM PC memory keyer	49.95	
1269 IBM code tutor	19.95	
1281 IBM Easy-DX logging program	39.95	
1286 Gray Line DX Advantage prog for IBM	29.95	
1292 Video digitizer for IBM	199.95	189.95
1610 Novice theory tutor software for IBM	29.95	
1611 Technician theory tutor software; IBM	29.95	
1612 General theory tutor software for IBM	29.95	
1613 Advanced theory tutor software; IBM	29.95	
1614 Extra theory tutor software for IBM	29.95	
1621 40-10m 54" portable ant w/tuner	79.95	74.95
1630 Novice theory tutor software for Mac	29.95	
1631 Technician theory tutor software; Mac	29.95	
1632 General theory tutor software for Mac	29.95	
1633 Advanced theory tutor software; Mac	29.95	
1634 Extra theory tutor software for Mac	29.95	
1700B Combination ant/xmtr switch	64.95	
1701 6-position coax switch	34.95	
1702B 2-position coax switch	21.95	
1702BN 2-pos 1.1 GHz type N switch	31.95	
1704 4-pos 500 MHz switch/lightning protect	59.95	
1704N 4-position type N switch	69.95	
1710 2m ⅜ wave telescopic antenna	9.95	
1712 2m/440 telescopic antenna	14.95	
1714 2m ½ wave telescopic antenna	16.95	
1718 2m shorty duck for HT	12.95	
1724B 2m/440 magnet mt antenna	14.95	
1728 2m ⅝ wave magnet mt antenna	24.95	
1730 2m pocket roll-up vertical ant	14.95	
1740 2m ¼ wave ground plane ant	12.95	
1750 2m ⅝ wave ground plane ant	19.95	
1752 220 ⅝ wave ground plane ant	19.95	
1763 2m 3el portable beam	39.95	

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	Reg	Sale
1764 2 & 6m dual ⅝ super gain base ant	34.95	
1765 Direct feed power splitter/cbl harness	29.95	
1766 Stacked 2m dual ⅝ base antenna	89.95	
1784 36" dia Super Loop 10-30MHz ant	199.95	179.95
1312B 12vdc 300ma adapter for 1784	12.95	
1796 40/20/15/10/6/2m 10' vertical ant	169.95	154.95
1824BB Cell look alike BNC scanner ant	19.95	
1824BM Cell look Motorola plug scanner ant	19.95	
1828B Magnet mt BNC scanner antenna	29.95	
1828M Mag mt Motorola plug scanner ant	29.95	
1864 Base scanner antenna w/preamp	79.95	74.95
2040 Repeater controller	449.95	399.95
3036 The Packet Radio Operators book	12.95	
3101 Fox Hunt Adventure book	7.95	
3210 Novice license guide	7.95	
3211 Tech Plus license guide	7.95	
3212 No code tech license guide	14.95	
3213 General license guide	7.95	
3214 Advanced license guide	7.95	
3215 Extra license guide	7.95	
3301 Troubleshooting Antenna & Feedlines book	12.95	
5024 MFJ TNC - Icom/Yaesu/Alinco HT cable	14.95	
5024X PK-232 - Icom/Yaesu/Alinco HT cable	14.95	
5024YV KAM - Icom/Yaesu/Alinco HT cable	14.95	
5024Z PK-88 - Icom/Yaesu/Alinco HT cable	14.95	
5026 MFJ TNC - Kenwood HT cable	14.95	
5026X PK-232 - Kenwood HT cable	14.95	
5026YV KAM - Kenwood HT cable	14.95	
5026Z PK-88 - Kenwood HT cable	14.95	
5080 MFJ TNC - Yaesu 8-pin cable	14.95	
5080X PK-232 - Yaesu 8-pin cable	14.95	
5080YH KAM HF port - Yaesu 8-pin cable	14.95	
5080YV KAM VHF port - Yaesu 8-pin cable	14.95	
5080Z PK-88 - Yaesu 8-pin cable	14.95	
5082 Open end - 8-pin mic cable	9.95	
5084 MFJ TNC - Icom 8-pin cable	14.95	
5084X PK-232 - Icom 8-pin cable	14.95	
5084YH KAM HF port - Icom 8-pin cable	14.95	
5084YV KAM VHF port - Icom 8-pin cable	14.95	
5084Z PK-88 - Icom 8-pin cable	14.95	
5086 MFJ TNC - Kenwood/Alinco 8-pin cable	14.95	
5086X PK-232 - Kenwood/Alinco 8-pin cable	14.95	
5086YH KAM HF port - Ken/Ali 8-pin cable	14.95	
5086YV KAM VHF port - Ken/Ali 8-pin cable	14.95	
5086Z PK-88 - Kenwood/Alinco 8-pin cable	14.95	
5222 Open end - Alinco split HT cable	9.95	
5224 Open end - Icom/Yaesu/Alinco HT cable	9.95	
5226 Open end - Kenwood HT cable	9.95	
5268 Open end - modular phone plug cable	7.95	
5412 IBM printer cable	9.95	
5413 RS-232 cable DB-25M-252	9.95	
5414 RS-232 cable DB-25M-9F2	9.95	
5803 3' coax jumper cable	4.95	
8100K Shortwave regenerative Rcvr kit	59.95	
8100W Shortwave regenerative Rcvr wired	79.95	72.95
9015 5w 15m CW Xcvr	179.95	154.95
9017 5w 17m CW Xcvr	179.95	154.95
9020 5w 20m CW Xcvr	179.95	154.95
9030 5w 30m CW Xcvr	179.95	154.95
9040 5w 40m CW Xcvr	179.95	154.95
27 Handle for CW station	4.95	
412 Plug-in Curtis keyer	39.95	
726 Plug-in audio filter	29.95	
971 200w portable ant tuner w/meter	89.95	84.95
1770 Portable 15m dipole	34.95	
1771 Portable 17m dipole	34.95	
1772 Portable 20m dipole	34.95	
1773 Portable 30m dipole	34.95	
1774 Portable 40m dipole	34.95	
4112 Portable power pack	49.95	
4114 Rechargeable power pack	69.95	64.95
9115B 9015 Xcvr/971 tuner/4114 ps/1772 ant	329.80	299.95
9117B 9017 Xcvr/971 tuner/4114 ps/1772 ant	329.80	299.95
9120B 9020 Xcvr/971 tuner/4114 ps/1772 ant	329.80	299.95
9130B 9030 Xcvr/971 tuner/4114 ps/1773 ant	329.80	299.95
9140B 9040 Xcvr/971 tuner/4114 ps/1774 ant	329.80	299.95

NOTE: All MFJ models stocked at Milwaukee World Headquarters. Branch stores carry items that sell well in their area.

	Reg	Sale
METRON (Magnus) (MET)		
MA-1000B 160-15m 600w PEP mobile amp ..	1300.00	**1169**
MIRAGE (MIR)		
A-1015G 6m FM/SSB 10/150w amp/preamp	$348.00	**329.95**
A-1035G* 6m FM/SSB 10/350w 28v amp/pre	586.00	**529.95**
B-23/S 2m FM/SSB 2/30w amplifier	116.00	**109.95**
B-23G 2m FM/SSB 2/30w amp/preamp	159.00	**149.95**
B-215G 2m FM/SSB 2/150w amp/preamp	339.00	**299.95**
B-108G 2m FM/SSB 10/80w amp/preamp	214.00	**189.95**
B-1016G 2m FM/SSB 10/160w amp/preamp .	338.00	**299.95**
B-1030G 2m FM/SSB 10/300w amp/preamp .	586.00	**529.95**
B-1060G* 2m FM/SSB 10/600w 28v amp/pre	920.00	**829.95**
B-2516G 2m FM/SSB 25/160w amp/preamp .	285.00	**259.95**
B-3030G 2m FM/SSB 30/300w amp/pre ....Dm	586.00	**499.95**
B-2530G 2m FM/SSB 25/300w amp/preamp .	586.00	**529.95**
B-2560G* 2m FM/SSB 25/600w 28v amp/pre	920.00	**829.95**
B-5016G 2m FM/SSB 50/160w amp/preamp .	285.00	**259.95**
B-5030G 2m FM/SSB 50/300w amp/preamp ...	572.00	**529.95**
B-5060G* 2m FM/SSB 50/600w 28v amp/pre	920.00	**829.95**

*Requires 28 volts; information on combining power supplies included in operations manual.

C-22 220 FM/SSB 2/20w amplifier	116.00	**109.95**
C-22G 220 FM/SSB 2/20w amp/preamp	159.00	**149.95**
C-211G 220 FM/SSB 2/110w amp/preamp	320.00	**299.95**
C-106G 220 FM/SSB 10/60w amp/preamp	214.00	**189.95**
C-1012G 220 FM/SSB 10/120w amp/preamp	320.00	**299.95**
C-1022G 220 FM/SSB 10/220w amp/preamp	586.00	**529.95**
C-3012G 220 FM/SSB 30/120w amp/pre ....Dmw	299.00	**239.95**
C-2512G 220 FM/SSB 25/120w amp/preamp	299.00	**279.95**
C-2522G 220 FM/SSB 25/220w amp/preamp	586.00	**529.95**
C-5012G 220 FM/SSB 50/120w amp/preamp ..	299.00	**279.95**
C-5022G 220 FM/SSB 50/220w amp/preamp ..	572.00	**529.95**
D-15N 430 FM/SSB/ATV 2/18w type N amp ...	178.00	**169.95**
D-26N 440 FM/SSB 2/60w type N amplifier ...	254.00	**239.95**
D-1010N 440 FM/SSB 10/100w type N amp ..	372.00	**349.95**
D-3010N 440 FM/SSB 30/100w type N amp ..	343.00	**319.95**
D-100-ATVN 430 ATV 1/52w type N amp	372.00	**349.95**
D-1010-ATVN 430 ATV 10/100w type N amp ..	372.00	**349.95**
RC-1* Remote control head w/18' cable	40.00	

*Not for B-23/C-22/D-26

The following Repeater Amplifiers are available on Special Order. Specify SO-239 or type N connectors

A-1015R 50-52 FM 2/80w amplifier	$499.00	**459.95**
B-215R 2m FM 1/110w amplifier	484.00	**449.95**
B-1016R 2m FM 2/120w amplifier	520.00	**479.95**
B-2516R 2m FM 12/120w amplifier	475.00	**439.95**
C-211R 220 FM .5/80w amplifier	541.00	**499.95**
C-1012R 220 FM 5/90w amplifier	541.00	**499.95**
C-2512R 220 FM 15/90w amplifier	465.00	**429.95**
D-1010NR 440 FM 4/80w type N amp	566.00	**519.95**
D-3010NR 440 FM 12/80w type N amp	539.00	**499.95**
D-100-ATVN-R 430 ATV 1/40w type N amp	566.00	**519.95**

MIRAGE - continued

	Reg	Sale
D-1010-ATVN-R 430 ATV 4/80w type N amp ..	566.00	**519.95**

PREAMPS

KP-1/10M 10m in shack preamp	$117.00	
KP-1/6M 6m in shack preamp	117.00	
KP-1/2M 2m in shack preamp	117.00	
KP-1/220 220 in shack preamp	117.00	
KP-1/440 440 in shack preamp	117.00	
KP-2/10M 10m mast mount preamp	165.00	
KP-2/6M 6m mast mount preamp	165.00	
KP-2/2M 2m mast mount preamp	165.00	
KP-2/220 220 mast mount preamp	165.00	
KP-2/440 440 mast mount preamp	165.00	

WATTMETERS

MP-1 160-10m 25/200/2kw PEP wattmeter ..	$200.00	**179.95**
MP-2 6 & 2m 50/500/1.5kw PEP wattmeter ..	200.00	**179.95**
MP-3 420-450 MHz wattmeter	228.00	**219.95**
MP-4 1.2 GHz wattmeter	242.00	**229.95**

MOTOROLA (MOT)

Belt clip kit for HTs	$ 14.95	

NAVAL (NAV)

HTS-2 5-15vdc amplified speaker	$ 29.95	

NICAD BATTERIES

GE NICADS (GEX)

2GE3A AAA size nicad .....pair	$ 6.81	
2GC1 AA size nicad .....pair	6.81	
2GC2 C size nicad .....pair	8.49	
2GC3 D size nicad .....pair	8.49	
GC9B 9V nicad .....each	8.49	
BC-4B/Charge 4 Charger for 4 nicads	13.49	
BC-8B/Charge 8 Charger for 8 nicads	21.99	

SAFT NICADS (SAF)

2CSAAA AAA size nicad .....pair,Δmf	$ 7.99	**5.95**
2CSAA AA size nicad .....pair,Δmwf	7.99	**5.95**
2CSC C size nicad .....pair,Δmwc	8.99	**6.95**
2CSD D size nicad .....pair,Δmw	8.99	**6.95**
CS9T 9V nicad .....each,Δmwfc	10.99	**8.95**
CC-1 Charger for 4 nicads .....Δmwf	14.95	**12.95**

JABRO NICADS (JAB)

J/CM-2 Replacement inserts; Icom BP-2	$ 24.25	
J/CM-3 Replacement inserts; Icom BP-3	27.40	
J/CM-5 Replacement inserts; Icom BP-5	30.50	
J/CM-7 Replacement inserts; Icom BP-7	37.20	
J/CM-8 Replacement inserts; Icom BP-8	37.40	
J/CM-7F 13.2v 450ma batt for Icom	72.70	**59.95**
J/CM-8F 8.4v 850ma batt for Icom	70.00	**59.95**

PERIPHEX NICADS (PER)

BP-7S 13.2v 1200ma battery for Icom	$ 65.00	
BP-8S 8.4v 1200ma battery for Icom	65.00	
BP-83S 7.2v 750ma battery for Icom	43.50	
BP-84S 7.2v 1400ma battery for Icom	63.00	
BP-85S 12v 800ma battery for Icom	76.00	

NICADS - continued

	Reg	Sale
BP-114S 12v 800ma battery for Icom	79.00	
EBP-22S 12v 800ma battery for Alinco	65.00	
EBP-24S 7.2v 1500ma battery for Alinco	62.00	
PB-8S 12v 800ma battery for Kenwood	59.00	
PB-13S 7.2v 1200ma battery for Kenwood	49.75	
PB-14S 12v 400ma battery for Kenwood	60.00	
FNB-14S 7.2v 1400ma battery for Yaesu	59.75	
FNB-26S 7.2v 1400ma battery for Yaesu	65.00	
FNB-27S 12v 800ma battery for Yaesu	65.00	

NORCOMM (NOR)

NC-401 Sub-miniature DTMF decoder	$ 59.95	

NYE VIKING (NYE)

ANTENNA TUNERS AND ACCESSORIES

MBIV-A1 3kw tuner without balun	$638.00	**569.95**
MBIV-A2 3kw tuner with balun	693.00	**599.95**
MBV-A 3kw tuner with ant switch & meters ..	791.00	**699.95**
MBV-B As MBV-A, without meters	627.00	**549.95**
020-001 2kw low-pass filter	45.00	
RFM-003 3kw power monitor w/3kw coupler .	375.00	**329.95**
RFM-005 5kw power monitor w/5kw coupler .	395.00	**349.95**
C-1.8-30-5C 300/500w coupler	85.00	
C-1.8-30-5K Extra 3kw/5kw coupler	85.00	
CS-4 4-pos coupler switch w/LED .....Dmv	39.00	**19.95**

PHONE PATCHES

047-001 Phone patch w/4-pin, no spkr	$143.00	**129.95**
047-002 Phone patch w/8-pin, no spkr	159.00	**144.95**
047-003 Phone patch w/8-pin & spkr	170.00	**154.95**

KEYER AND SQUEEZE PADDLE

ESK-001 Battery operated CMOS keyer ....Dwf	$ 98.50	**59.95**
SSK-001 Dual paddle Super Squeeze Key	51.00	**49.95**

MASTER KEY

330-001 Black enamel base w/cable, plug ...	$ 61.00	**59.95**

HEAVY DUTY SPEED-X KEYS WITH NAVY KNOBS

320-001 No shorting switch	$ 28.60	
320-003 As above, w/shorting switch	32.45	
322-001 Brass hardware, no switch	30.50	
322-003 As above, w/shorting switch	34.65	

STANDARD SPEED-X KEYS

310-001 Black, no shorting switch	$ 26.40	
310-003 As above, w/shorting switch	30.25	
312-001 Brass arm, no shorting switch	28.60	
312-003 As above, w/shorting switch	32.45	
315-001 Polished brass oval key, steel base .	51.75	
315-003 As above, w/shorting switch	57.50	

KEY ACCESSORIES

013-001 Navy knob	$ 7.50	
300-001 Black plastic base for keys	8.00	
300-002 Hvy steel base, no-skid feet for keys .	15.50	

CODE PRACTICE SETS (BUZZER)

404-001 Code practice set without key	$ 23.00	
404-002 Code practice set w/310-001 key	49.40	

Order Toll Free: 1-800-558-0411 *FAX: (414) 358-3337*

AMATEUR ELECTRONIC SUPPLY® Inc.

5710 W. Good Hope Road; Milwaukee, WI 53223 • Phone (414) 358-0333

AES® Store Locations	Phone	Toll Free	FAX
Milwaukee, WI 53223; 5710 W. Good Hope Road	(414) 358-0333	1-800-558-0411	(414) 358-3337
Wickliffe, OH 44092; 28940 Euclid Avenue.....	(216) 585-7388	1-800-321-3594	(216) 585-1024
Orlando, FL 32803; 621 Commonwealth Avenue.....	(407) 894-3238	1-800-327-1917	(407) 894-7553
Clearwater, FL 34625; 1898 Drew Street	(813) 461-4267		(813) 443-7893
Las Vegas, NV 89106; 1072 N. Rancho Drive	(702) 647-3114	1-800-634-6227	(702) 647-3412

Watch for Future AES® Branch Store Openings!

	Reg	Sale

Oak Bay Technologies (OAK)

AM-101B BNC duck window mount	$ 24.95	
CA-232U Universal packet cable	34.95	
LP-11P 90db 1kw low-pass filter	69.95	
PS-101 Heavy duty DC power strip	79.95	

OUTBACKER (OUT)

OB-8 300w PEP 6' 75-10m 8-band mobile ant	$259.00	
OB-8HP 500w PEP 6' 75-10m 8-band mob ant	289.00	
OB-S8 8-band mobile ant w/storage bag	289.00	
OB-S7 7-band mobile ant w/storage bag ....Dv	269.00	199.95
OB-5 300w PEP 6' 20-10m 5-band mob ant ....Dv	179.00	119.95
OB-JR8 150w PEP 4' 75-10m 8-band mob ant	229.00	
Perth 7.5' 75/40/30/20/17/12/10m mobile ant	269.00	
OB-M 300w PEP 6' 75/40/20/17/10m/HF marine	389.00	
OB-SB ⅜-24 spring and ½" hole base	69.00	
Diamond **K-400K-3/8M** Hole mt w/coax	69.95	

Palomar Engineers (PAL)

LA-1 Loop amplifier; matches loop to Rcvr	$ 99.95	
5-15 MHz plug-in loop (HF-1)	89.95	
1.6-5 MHz plug-in loop (160m, 80m)	89.95	
.55-1.6 MHz plug-in loop (AM broadcast)	89.95	
150-550 KHz plug-in loop (LF, 1750m)	89.95	
40-150 KHz plug-in loop (WWVB, Loran)	89.95	
10-40 KHz plug-in loop (Omega)	89.95	
M-835 Bar graph HF auto SWR/power meter	199.95	189.95
MLB-1 Magnetic longwire receiving balun	39.95	
P-405 1.8-54 MHz 20 db 9v Rcvr preamp	149.95	139.95
P-408 1.8-54 MHz 20 db AC Rcvr preamp	159.95	149.95
P-410X 160-6m 20 db Xcvr preamp	179.95	169.95
P-412X 160-6m 20 db mobile Xcvr preamp	179.95	169.95
PA-351 Indoor active receive antenna .....Dm	129.95	69.95
PF-300 SC audio filter	159.95	149.95
PK-200 Jones dual-paddle key	135.00	129.95
PT-340 Tuner-Tuner (use with ant tuner)	99.95	
RX-100 1-100 MHz RX noise bridge	79.95	
SB-4 2kw 1.7-30 MHz 4:1 balun w/SO-239	79.95	
VLF-A VLF converter; 10-500 KHz to 80m	79.95	
VLF-S VLF conv; 10-500 KHz to 4-4.5 MHz	79.95	

PANASONIC (PAN)

RF-B45 Compact FM/LW/MW/SW port Rcvr	$199.95	179.95
RF-B65 Compact FM/LW/MW/SW port Rcvr	279.95	249.95
WVLM-16 Lens only for CCTV camera .....Δm	29.00	2.95

PHILIPS (PHI)

U-105 Light duty rotor	$ 99.90	69.95
TB-105 Thrust bearing	18.25	

PICQUIC (PIC)

90101 Full size 6-in-1 screwdriver set	$ 16.95	
91102 Stubby 6-in-1 screwdriver set	12.95	

PIPO TOUCH-TONE PADS (PIP)

PK-1 12-digit pad	$ 71.00	
PK-1K 12-digit pad w/delay relay	78.00	
PK-1M 12-digit pad for surface mtg	71.00	
PK-2 16-digit pad	76.00	
PK-2K 16-digit pad w/delay relay	83.00	
PK-2M 16-digit pad for surface mtg	76.00	
PK-3-12 12-dig pad w/separate electronics	58.00	
PK-3-16 16-dig pad w/separate electronics	63.00	
PP-5 12-digit horizontal pad w/light	69.00	
PP-5K 12-digit horiz pad w/light & relay	76.00	
PP-5V 12-digit vertical pad w/light	69.00	
P-7H 12-digit horiz rugged mini pad	58.00	
P-7V 12-digit vertical rugged mini pad	58.00	
P-8V 16-digit vertical rugged mini pad	63.00	

PORTASOL (GC) (GCT)

P-1C/12-143 Portable butane soldering iron ..Δmv	$ 29.99	26.95

QSL Card Holders (ART)

QSL Card Holders, pack of 3, 20 cards/holder	$ 9.95	

RF Concepts (RFC)

2-23 2m FM/SSB 2/30w amp/preamp	$133.95	124.95
2-217 2m FM/SSB 2/170w amp/preamp	328.95	299.95
2-117 2m FM/SSB 10/170w amp/preamp	328.95	299.95
2-317 2m FM/SSB 30/170w amp/preamp	287.95	259.95

RF CONCEPTS - continued

	Reg	Sale
2-417 2m FM/SSB 45/170w amp/preamp	287.95	259.95
2/70 2m/440 FM 3/30//5/20w HT amp	239.95	219.95
2/70G 2m/440 FM 3/30//5/20w HT amp/preamp	269.95	239.95
2/70H 2m/440 20/200//20/100w amp	849.95	719.95
3-22 220 FM/SSB 2/20w amp/preamp	133.95	124.95
3-211 220 FM/SSB 2/110w amp/preamp	328.95	299.95
3-112 220 FM/SSB 10/120w amp/preamp	328.95	299.95
3-312 220 FM/SSB 30/120w amp/preamp	287.95	259.95
4-32 440 FM/SSB 3/20w amp/preamp	183.95	169.95
4-110 440 FM/SSB 10/100w amp/preamp	379.95	349.95
4-310 440 FM/SSB 30/100w amp/preamp	352.95	319.95

RF PARTS (See Diamond)

RF PRODUCTS (RFP)

196-214 2m ¼ wave BNC telescopic whip	$ 8.95	
199-416 BNC mag mt, 10' coax w/BNC	17.95	
199-495 SO-239 mag mt, 13' coax w/PL-259	23.95	

Radio Amateur Callbook (RAC)

08714X 1993 North American Callbook	$ 29.95	
087182 1993 International Callbook	29.95	
059235 World Radio TV Handbook	19.95	
RC0010 Prefix Map of the World	4.00	
RC0011 Map of North America	4.00	
RC0012 Great Circle Chart of the World	4.00	

RADIO AMATEUR CALLBOOK HANDBOOKS

087042 Beam Antenna Handbook	$ 11.95	
087050 All About VHF Amateur Radio	11.95	
087093 Interference Handbook	11.95	

GORDON WEST RADIO SCHOOL

GW0001 Complete Novice (code & theory) .....D	$ 59.95	
GW0002 Novice Code Course (6 tapes)	29.95	
GW0003 Novice Code Short Course (2 tapes)	14.95	
GW0005 21-day Novice Course (code & theory)	19.95	
GW0006 Mariner's 21-day Novice Course	29.95	
GW0007 Complete General (code & theory)	59.95	
GW0008 General Code Course (6 tapes)	29.95	
GW0010 2-Week Tech (code & theory)	19.95	
GW0012 Technician/General Theory Course	34.95	
GW0013 Complete Advanced (5-13wpm)	59.95	
GW0014 Complete Advanced (13-22wpm)	59.95	
GW0015 Advanced Theory Course	29.95	
GW0016 Complete Extra (code & theory)	59.95	
GW0017 Extra Class Code Course (6 tapes)	29.95	
GW0018 Extra Theory Course	29.95	
GW0030 Novice Theory Book (book only)	5.95	
GW0062 Plastic key & oscillator	15.95	
GW0990 FCC Rules and Regulations book	3.00	
GW1221 20 wpm Extra QSO test prep tape	9.95	
GW1318 13 wpm General QSO test prep tape	9.95	
GW5505 5 wpm Novice QSO test prep tape	9.95	
RC0053 N6RJ Electronic 2nd Op, 3½" IBM	59.95	
RC0055 N6RJ Electronic 2nd Op, 5¼" IBM	59.95	

RANGER (RAN)

RCI-2950 8/25w FM/SSB 10m Xcvr	$449.95	259.95
RCI-2970 100w FM/SSB 10m Xcvr		399.95

ROHN TOWERS (ROH)

HBX-40/BXB-6 40' tower, 10 sq ft, 228 lbs *T	$444.90	349.95
HBX-48/BXB-7 48' tower, 10 sq ft, 303 lbs *T	595.30	469.95
HBX-56/BXB-8 56' tower, 10 sq ft, 385 lbs *T	751.70	589.95
HDBX-40/BXB-7 40' tower, 18 sq ft, 281 lbs *T	553.30	429.95
HDBX-48/BXB-8 48' tower, 18 sq ft, 363 lbs *T	736.70	579.95

***Drop-shipped from factory or limited stock in Milwaukee for pick-up**

On factory drop-shipments we prefer payment in full with order, however, we will accept your credit card with the understanding that we will process the charge when we order the merchandise from the factory. This means that you may be billed before you receive your drop-shipped merchandise. Shipment is FOB the Rohn factory, which has various locations, via truck, COD for freight charges only. Freight charges will be collected upon delivery by the carrier. Please allow sufficient time for delivery on these drop-shipped towers. Most truck lines will not unload the tower for you, so please be sure to have enough manpower and/or equipment on hand when your tower is delivered by the carrier.

Note: Rohn states that "antennas developing a large twisting moment due to wind must not be used on HBX/HDBX-series towers. Antennas should be limited to those having a maximum boom length of 10 ft."

ROHN - continued

TOWER SECTIONS & ACCESSORIES

Milwaukee pick-up or shipped via truck, freight collect. Some small accessories may be shipped via UPS.

	Reg	Sale
25G 10' tower section .....T	$ 98.00	79.95
25-AG 25G top section for 1¼" mast .....T	107.00	89.95
25-AG2 25G top section for 2" mast .....T	114.00	94.95
AS-25G Rotor shelf for 25G	35.00	29.95
BPC-25G Concrete base plate for 25G .....T	88.00	79.95
EB-2525G Universal eave bracket for 25G	31.00	27.95
FR-25G Flat roof mount for 25G .....T	115.00	99.95
HB-25AG 0-15" adjustable house bkt; 25G	52.00	46.95
HB-25BG 0-24" adjustable house bkt; 25G	57.00	49.95
HB-25CG 0-36" adjustable house bkt; 25G	65.00	56.95
PR-25G Peak roof mount for 25G .....T	154.00	129.95
RP-25G Rotor post for 25G	19.80	
SB-25G 3' 4" concrete short base; 25G .....T	41.00	36.95
SBH-25G Hinged short base for 25G .....T	106.00	89.95
45G 10' tower section .....T	231.00	184.95
45-AG3 45G top section .....T	235.00	189.95
AS-455G Rotor shelf for 45G	87.00	69.95
BPC-45G Concrete base plate for 45G .....T	105.00	89.95
FR-45G Flat roof mount for 45G .....T	176.00	139.95
GA-45GD Guy bracket for 45G	88.00	79.95
SB-45G 5' concrete short base for 45G .....T	88.00	79.95
25G-90D060 25G 60' 90mph guyed tower ...T	1532.00	1199
45G-90D060 45G 60' 90mph guyed tower ...T	2779.00	2169
1/2-TBE&E ½" x 12" turnbuckle	24.00	
1/4EHS-1000 ¼" guy wire .....1000 ft.	220.00	179.95
3/8-THH ⅜" thimble for 1/4EHS .....each	2.30	
3/16EHS-1000 3/16" guy wire .....1000 ft.	160.00	129.95
5/16-THH 5/16" thimble for 3/16EHS .....each	1.35	
GAC-303 Anchor rod for 3/16EHS .....T	58.00	49.95
3/4X12PP Pier pin	10.00	
618-1000 6-strand, 18 ga guy wire ..1000 ft.	45.85	39.95
AG-KE Anchor wire grounding kit	100.00	79.95
BG-KE Base grounding kit	33.00	29.95
BG-2142 3/16" big grip w/sleeve	10.00	
BG-2144 ¼" big grip w/sleeve	11.55	
HBU 6-30" universal house bracket	53.00	46.95
161005-GHS 1¼" x 10' 16 ga mast .....T	9.15	
M-200 2" OD x 10' 16-gauge mast .....T	24.00	
TB-50 1¼" ID, 2" OD bushing	5.00	
TRT-36 3' snap-out tripod .....T	12.10	
TRT-64 64" snap-out tripod .....T	21.65	
TRT-122 10' snap-out tripod .....T	46.25	42.95

SGC (SGC)

04-01 SG-2000 150w 1.8-30 MHz 12v Xcvr	1995.00	1569
04-02 SG-2000 .5-30 MHz 12v receiver	1700.00	1529
04-03 SG-2000 150w 1.8-30 MHz 12v Xmtr	1700.00	1529
04-11 Remote head w/yoke mount & cable	695.00	629.95
04-12 Remote kit w/swivel bkt & cable	200.00	179.95
04-13 Remote kit w/5-way mount & cable	350.00	319.95
04-14 Rem kit w/suction cup mt & cable	495.00	449.95
51-81 Fan kit for continuous duty xmit	300.00	269.95
52-31 Waterproof military handset	300.00	269.95
52-32 Telephone handset	150.00	139.95
52-34 RS-232 interface for SG-2000 Xcvr	195.00	179.95
52-46 Mounting tray	50.00	
52-47 Shock/military mounting tray	300.00	269.95
52-51 CA-1 High voltage feed wire ..per ft.	70¢	
52-52 CA-2 RG-58 coax cable .....per ft.	90¢	
52-53 CA-230 Ant coupler cable .....per ft.	4.00	
52-54 CA-2000 Remote head cable .per ft.	4.00	
52-56 CA-4 RG-8A/U coax cable .....per ft.	1.10	
53-03 PS-35/AC 30A/45A peak HD ps	700.00	629.95
52-61 PSC/12-1 12' ps cable, 1 plug	50.00	
52-62 PSC/12-2 12' ps cable, 2 plugs	60.00	
52-63 PSC/25-1 25' ps cable, 1 plug	60.00	
52-64 PSC/25-2 25' ps cable, 2 plugs	70.00	
53-53 PS fan kit for continuous xmit	300.00	269.95
54-12 SG-230 150w 1.8-30 MHz 12v auto tuner	595.00	489.95
54-61 25' extension cable	60.00	
54-62 50' extension cable	90.00	
55-04 SG-103 1.8-30 MHz broadband 150w dipole	450.00	399.95
55-06 SG-104 2-28 MHz 90' 1kw dipole	700.00	629.95
55-27 SG-303 1.8-30 9' mobile whip & mt	495.00	399.95
55-67 Replacement whip for SG-303	150.00	139.95
55-41 SG-104 2-28MHz 90' 1kw dipole w/coax	750.00	679.95
55-45 QMS Quick universal mount system	490.00	399.95

SGC - continued

	Reg	Sale
55-46 QMS-1 Quick mt system w/SG-230	1085.00	869.95
55-47 QMS-2 Quick mt sys w/SG-230/303	1435.00	1199
55-91 60' RG-58/U coax w/PL-259s	50.00	
55-92 120' RG-58/U coax w/PL-259s	70.00	
55-93 60' RG-8 coax w/PL-259s	80.00	
55-94 120' RG-8 coax w/PL-259s	120.00	
55-95 150' total extension; SG-103/104	70.00	
56-15 External ARQ/FEC system	1200.00	1069
90-30 SG-2000-RS Spares kit for SG-2000	789.00	709.95
90-31 SG-2000-DS Depot spares kit; SG-2000	1512.00	1349
90-32 SG-2000-CS Dlx spares kit; SG-2000	3953.00	3549
91-92 SG-2000-MM Maint manual; SG-2000	70.00	

Call for quote on SGC commercial ALE system

SAMS Books (SAM)

Active Filter Cookbook	$ 24.95	
CMOS Cookbook	24.95	
IC OP-AMP Cookbook	24.95	
IC Timer Cookbook	24.95	
Radio Handbook	39.95	
Radio Operators Commercial License Q & A Manual	24.95	

SANGEAN (SAN)

ATS-803A AM/FM/shortwave portable Rcvr	$249.00	189.95
ATS-808 AM/FM/shortwave portable Rcvr	259.00	189.95
DT-200V AM/FM/VHF TV sound dig port Rcvr	79.95	69.95
SG-796 AM/FM/shortwave portable Rcvr .....D	59.95	

SHAKESPEARE (SHA)

376-GB 10m 18' tunable fg base ant (UPS OK)	$ 87.95	59.95

SHURE (SHU)

444D High/low-Z desk microphone	$ 87.75	79.95
R111 Replacement cartridge	27.00	
526T Series II Dynamic amplified desk mic	117.00	99.95
R96 Replacement cartridge	24.65	
404C High-Z deluxe mobile microphone	58.00	49.95
R5F Replacement cartridge	26.80	

SMILEY ANTENNA (SMI)

270A 2m/440 gain telescopic whip	$ 19.95	
5/8 SLD-2 2m ⅝ Slim Duck rubber ant	17.95	
5/8 SLD-220 220 ⅝ Slim Duck rubber ant	17.95	
5/8 SLD-440 440 ⅝ Slim Duck rubber ant	17.95	
5/8 SLD-2 Combo 2m ⅝ duck & stubby ant	24.95	
5/8 SLD-220 Combo 220 ⅝ duck & stubby ant	24.95	
5/8 SLD-440 Combo 440 ⅝ duck & stubby ant	24.95	
RD-2 2m rubber duck antenna	14.95	
RD-220 220 rubber duck antenna	14.95	
RDMD-2 2m mini rubber duck antenna	14.95	
RDMD-220 220 mini rubber duck antenna	14.95	
RDMD-440 440 mini rubber duck antenna	14.95	
RDS-2 2m stubby rubber duck antenna	14.95	
RDS-220 220 stubby rubber duck antenna	14.95	
RDS-440 440 stubby rubber duck antenna	14.95	
SD-2 2m Slim Duck thin rubber antenna	14.95	
SD-220 220 Slim Duck thin rubber antenna	14.95	
SL-440 440 slimline type duck	12.95	
SS-II Super Stick 2m ⅝ wv telescopic ant	19.95	
SS-III Super Stick 220 ⅝ wv telescopic ant	19.95	
SS-IV Super Stick 440 ⅝ wv telescopic ant	19.95	
SS-II/Combo 2m ⅝ wv telescopic & stubby ant	26.95	
SS-III/Combo 220 ⅝ wv telescopic & stubby ant	26.95	
SS-IV/Combo 440 ⅝ wv telescopic & stubby ant	26.95	
TAQ-2 2m ¼ wave stainless whip	10.95	
TAQ-220 220 ¼ wave stainless whip	10.95	
TAQ-440 440 ¼ wave stainless whip	10.95	
TS Thin Stick 2m/220 ⅜ wave telescopic whip	16.95	

SOLARCON (SOL)

A-99 10m fiberglass base station antenna	$ 74.95	59.95

SONY (SON)

CRF-V21 Dlx FM/SW receiver w/FAX printer	7000.00	4369
ICF-2010 AM/FM/SW/LW/air port Rcvr w/ps	519.95	349.95
DCC-127A Car cord	36.00	
ICF-7601 AM/FM/SW portable receiver	159.95	119.95
ICF-7700 AM/FM/SW/LW portable receiver	259.95	169.95
ICF-SW1S AM/FM/SW compact receiver	419.95	299.95
ICF-SW15 AM/FM/SW portable receiver	99.95	89.95
ICF-SW20 AM/FM/SW portable receiver	119.95	99.95
ICF-SW55 AM/FM/SW portable receiver	469.95	369.95

SONY - continued

	Reg	Sale
ICF-SW77 AM/FM/SW portable receiver	659.95	499.95
ICF-SW800 AM/FM/SW port Rcvr/prog cards	179.95	129.95
ICF-SW7600 AM/FM/SW receiver	299.95	219.95
PRO-80 150KHz-108MHz,115-223MHz port scan	549.95	369.95
ACD-4L AC power supply	21.95	
DCC-127A Car cord	36.00	
AN-1 LW/MW/SW outdoor active receive ant	139.95	129.95
AN-3 Aircraft active receive antenna	129.95	119.95
AN-102 LW/MW/SW indoor active receive ant	99.95	89.95
IPS-360 Palm size GPS Rcvr w/batt case	895.00	799.95

The following are SONY Consumer Products available from our AUDIO PLUS Division in Oshkosh, Wisconsin.

Please call Don or Paul Direct for information and to place your Order for these items.

Phone: (800) 462-9489 • (414) 235-8934

See Display ad on Page 134

DISCMANS

D36 1 bit w/mega bass	$184.95	134.95
D802 Car 8x oversampling, mega bass	299.99	219.95
D-808 Car, 1 bit, dig signal processing	359.99	259.95

AM/FM WALKMANS

SRFM30 Digital AM/FM	$ 49.99	34.95
SRF26 FM only	19.99	12.95

AM/FM CASSETTE WALKMANS

WMFX43 Dig, auto reverse, mega bass, Dolby	$129.99	79.95
WMFX55 Super walkman	179.99	139.95

SPORT WALKMANS

SRF8 AM/FM	$ 49.99	34.95
SRFM50 AM/FM	64.99	44.95
WMSXF30	99.99	74.95
WMF2078 Top of the line, digital & Dolby	159.99	109.95

PORTABLES

CFM140II Mono, one touch recording	$ 49.99	34.95
CFSW305 Dual cassette	99.99	64.95
CFS902 Sports, rugged splash resistant	109.99	77.95
CFD757 1 bit CD, digital, remote	399.99	259.95
CFD767 1 bit CD, dig, autoreverse, rem, 20w	449.99	299.95

MICRO CASSETTES

M440 VOC	$ 49.99	33.95
M665 VOR w/recharger & AC adapter	79.99	56.95

INTEGRATED TELEPHONE & ANSWERING MACHINES

ITI205 LED message counter	$179.99	129.95
ITI505 Voice time & date stamp	229.99	169.95

ANSWERING MACHINES

TAM30 Adjustable ring w/toll saver	$129.99	69.95
TAM50 Voice time & date stamp	149.99	89.95

FEATURE PHONES

ITD10 Scratch pad memory	$ 89.99	49.95
ITD20 2-line, distinctive ring for each line	119.99	79.95

CORDLESS PHONES

SPP85 10 channel	$179.99	109.95
SPP160 10 ch, spkr phone, intercom	249.99	149.95
SPP320 Top of the line, two phones in one	329.99	239.95
SPPD15 2-line, 10 number memory	269.99	199.95

WIRELESS SPEAKERS & HEADPHONES

IFS20K 23 ft, 200-20,000 Hz speaker	$249.99	199.95
IFS50K 23 ft, 100-20,000 Hz speaker	349.99	259.95
MDRIF510K 23 ft, 18-20,000 Hz headphones	199.99	159.95

SOUTH RIVER (UPS OK) (SOU)

HDT-3E-PPK 3' boxed tripod	$ 17.95	
HDT-5E-PPK 5' boxed tripod	25.95	

STANDARD (STA)

C-228A 2m/220 FM HT/batt/cgr/TTP/CTCSS	$719.00	549.95
C-528A 2m/440 FM HT/batt/cgr/TTP/CTCSS	699.00	429.95
C-558A 2m/440 FM HT/batt/cgr/TTP/CTCSS	689.00	519.95
CAX-02 Bottom cover	11.00	
CAW-150 Mobile power supply cable	15.00	
CAW-151 12vdc power supply cable	11.00	
CBT-151 Battery case	17.00	
CHP-111 Headset mic w/PTT switch	34.00	
CHP-150 Headset mic w/VOX	63.00	

STANDARD - continued

	Reg	Sale
CLC-520 Std carrying case; 228A/528A	18.00	
CLC-521 Large carrying case; 228A/528A	20.00	
CLC-550 Standard carrying case; 558A	20.00	
CLC-551 Large carrying case; 558A	22.00	
CLC-555GN Green case for 558A	25.00	
CLC-555OR Orange case for 558A	25.00	
CMB-111 Mobile bracket	19.00	
CMC-150 Mobile charger	24.00	
CMP-111 Speaker/mic	42.00	
CMP-113 Tie-pin spkr/mic	32.00	
CMP-115 Mini speaker/mic	39.00	
CMU-160 40 ch memory; 558A/168A	24.00	
CMU-161 200 ch memory; 558A/168A	34.00	
CNB-151 Extra 7.2v 700ma nicad batt	59.00	
CNB-152 12v 600ma nicad battery	89.00	
CNB-153 7.2v 1000ma nicad battery	84.00	
CSA-181A Desk rapid charger	96.00	
CTN-520 Encoder/decoder; early 228/528A	74.00	
C-168A Dlx sub-mini 2m FM HT/batt/cgr/TTP	489.00	309.95
C-468A Dlx sub-mini 440 FM HT/batt/cgr/TTP	499.00	359.95
CAX-03 Bottom cover	11.00	
CAX-160 Remote battery adapter	39.00	
CBT-160 Battery case	17.00	
CLC-160 Mini carrying case	20.00	
CLC-161 Mini carrying case	20.00	
CLC-162 Mini carrying case	22.00	
CMU-160 40 ch memory; 168A/558A	24.00	
CMU-161 200 ch memory; 168A/558A	34.00	
CNB-160 Mini 6v 300ma nicad battery	54.00	
CNB-161 Mini 7.2v 700ma nicad battery	59.00	
CNB-162 Mini 12v 600ma nicad battery	99.00	
CNB-163 Mini 7.2v 1000ma nicad batt	84.00	
CSK-12 External speaker	39.00	

Extra $10 off every Standard handheld or mobile transceiver, 11/15/92 until 1/30/93

C-188A Thin sub-mini 2m HT/batt/cgr/TTP	514.00	369.95
C-488A Thin sub-mini 440 HT/batt/cgr/TTP	TBA	
CLC-181 Carrying case w/CNB-181	18.00	
CLC-182 Carrying case w/CNB-182/3/4	20.00	
CMA-181 Mobile adapter	31.00	
CMU-182 200 ch memory for C-188A	36.00	
CNB-181 4.8v 700ma nicad battery	46.00	
CNB-182 9.6v 600ma nicad battery	89.00	
CNB-183 6v 1100ma nicad battery	76.00	
CNB-184 6v 700ma nicad battery	54.00	
C-5608DA 50/40w 2m/440 FM Xcvr w/TTP	1199.00	699.95
CTN-5600 Encoder/decoder; early units	69.00	

STARTEK (STR)

15-BG 1-1500MHz bar graph ultra hi sens ctr ...†	$220.00	169.95
15-UHS 1-1500 MHz ultra high sens ctr .....†	159.00	144.95
35-BG 1-3200 MHz bar graph ultra hi sens ctr	265.00	239.95
1350 1-1300 MHz frequency counter	129.00	119.95
2500 10 Hz-2400 MHz frequency counter ....†	189.00	169.95
3500 10 Hz-3500 MHz frequency counter	250.00	229.95
CC-90 Carrying case	12.00	
DC-10 Direct probe	20.00	
LP-22 Lo-pass probe	22.00	
M-207IC Interface cable	10.00	
P-110 200 MHz X1-X10 probe	39.00	
TA-90 Telescopic antenna	12.00	
TA-90L Right angle telescopic antenna	17.00	

TPS (TPS)

PS-75 75A power supply w/fan, 100A surge	$355.00	259.95
PS-45 45A power supply w/fan	260.00	199.95
PS-30 30A power supply	170.00	129.95
PS-15 15A power supply	130.00	99.95
Rack Mount	48.00	29.95

TAB Books (TAB)

Shortwave Listener's Handbook	$ 17.60
How to be a Ham 3rd Edition	13.60
Complete Shortwave Listener	17.60
Advanced Appleworks	17.60

TEMPO (TEM)

ACH-25 Extra wall charger; S-15/S-15T v	$ 15.00	
BP-15 Extra battery pack; S-15/S-15T	39.00	
TS-BP Extra 250ma batt for early S-1 .....Δm	29.00	

TEMPO - continued

		Reg	Sale
TS-BP2	Extra 450ma batt; S-2/4/5/late S-1 ....Δm	39.00	

TEN-TEC (TEN)

268	Remote cable; 536 - 253/420 .....Δm	$ 32.00	24.95
269	QSK cable; 536 - Ten-Tec amp .....Δm	16.00	12.95
303	Fan kit; 536 in key down modes .....Δmv	30.00	19.95
936	22A power supply for 536 .....Δmv	249.00	169.95
535	Argonaut II QRP Xcvr/SW receiver ...Δwfv	1445.00	1099
935	2A power supply for 535 .....Δmwfv	89.00	59.95
290	5w max input step attenuator; 535 ..Δm	37.00	29.95
293	Mobile mount for 535/536 .....Δwv	53.00	29.95
216	500 Hz 6-pole FSK filter (9 MHz) .....Δwfv	74.00	59.95
217	500 Hz 8-pole CW filtr (9 MHz); 562 .Δmwfv	74.00	59.95
218	1.8 KHz 8-pole SSB filt (9 MHz); 562 .Δwfv	74.00	59.95
219	250 Hz 8-pole CW filt (9 MHz); 562 .Δmwfv	74.00	59.95
220	2.4 KHz 8-pole SSB filt (9 MHz); 562 .Δmwv	74.00	59.95
301	Remote freq tng control; 562 .....Δfv	84.00	59.95
256	FM transceive module; 585 .....Δv	65.00	49.95
257	Voice synthesizer; 585 .....Δfv	89.00	69.95
258	RS-232 interface; 585 .....Δmwv	65.00	49.95
258-IBM	Serial comm software; IBM .....Δf	10.00	8.95
258-COM	Serial software; C-128 .....Δmwv	10.00	4.95
259	Universal ALC annunciator; 585 ....Δmfv	39.00	29.95
282	250 Hz 6-pole CW filter; 585 .....Δf	74.00	59.95
288	1.8 KHz 8-pole SSB filter; 585 .....Δv	74.00	59.95
604	Iambic keyer w/dual paddles .....Δmfv	165.00	119.95
605	Electronic keyer w/single paddle .....Δw	84.00	59.95
606	Single paddle Curtis chip keyer ...Δmwfv	92.00	59.95
1140	18/24.3A DC circuit breaker; 585 .....Δv	18.00	16.95
RM-19-1750	19"h x 21"w x 18"d cabinet Δm	285.00	189.95
RM-238	Rack mt kit fof 238 ant tuner ..Δm	25.00	16.95
RM-253	Rack mt kit for 253 ant tuner ..Δm	25.00	16.95
RM-425	Rack mt kit for 425 amplifier ..Δm	25.00	16.95
RM-P0175-19	1¾" panel, 3 unit install ....Δm	8.45	2.95
RM-P0700-19	7" panel, 2 unit install .....Δm	20.60	9.95
236	Rem control cbl;562/585//420 .....Δmwfv	57.00	39.95
264	Rem control extension cbl; 420/253 ..Δmfv	32.00	24.95
9423	Rem control head/12' cable; 420 ...Δmf	147.00	109.95
300	12' extension cable for 9423 ....Δmwfv	45.00	34.95
81561	Vacuum relay board for 422 .....Δm	93.00	74.95
239	160-2m 300w dummy load .....Δwv	32.00	24.95
254	200w antenna tuner/SWR .....Δmwv	199.00	149.95
291	200w bare bones antenna tuner ..Δmwfv	105.00	69.95
5060	75 ohm high-pass filter .....Δmfv	16.00	14.95
5061	2kw low-pass filter .....Δmwv	99.00	69.95
23227	Variable capacitor as in 254 tuner Δm	21.00	16.95
80402	Tapped inductor as in 254 tuner ...Δm	24.00	19.95
80858-1	Variable capacitor as in 238 tuner .Δm	58.00	39.95
81040	Roller inductor as in 253 tuner .....Δm	62.00	49.95

ULTIMATE MOBILE ANTENNAS

3180	80m antenna, 78" high .....Dw	$ 37.00	12.95
3130	30m antenna, 72" high .....Dmv	37.00	12.95
3115	15m antenna, 72" high .....Dwv	30.00	14.95
4080	80m antenna, 78" high .....Δwf	37.00	29.95
4075	75m antenna, 78" high .....Δwf	37.00	29.95
4040	40m antenna, 72" high .....Δf	37.00	29.95
4030	30m antenna, 72" high .....Δmwv	37.00	29.95
4017	17m antenna, 72" high .....Δmfv	30.00	24.95
4015	15m antenna, 72" high .....Δf	30.00	24.95
4012	12m antenna, 72" high .....Δmwfv	30.00	19.95
4010	10m antenna, 72" high .....Δw	30.00	24.95
3101	42" top section stinger .....Δmfv	9.00	6.95
3101L	49" top section stinger .....Δmv	9.00	6.95
3001	Switch mob match; 80-20m .....Δwfv	22.00	14.95

CONSTRUCTO SERIES EQUIPMENT ENCLOSURES

BU-625	Blue, 6"W x 2½"H x 5"D	$ 30.06
BU-649	Blue, 6"W x 4"H x 9"D	36.78
BU-927	Blue, 9"W x 2½"H x 7"D	34.53
BU-945	Blue, 9"W x 4"H x 5"D	34.59
BU-949	Blue, 9"W x 4"H x 9"D	41.03
BU-959	Blue, 9"W x 5½"H x 9"D	42.40
BU-1227	Blue, 12"W x 2½"H x 7"D	37.68

GREY PANELS W/BLACK SIDE PANELS

DG-8	8"W x 4½"H x 10½"D	$ 22.78
JG-8	8¼"W x 2½"H x 6"D	12.99
LG-5	5"W x 3¼"H x 7"D	11.46
LG-10	10¼"W x 3¼"H x 7"D	16.90
MG-8	4½"W x 8¼"H x 6½"D	16.36

TEN-TEC - continued

H-SERIES BOX

HG-8	Low profile, 8"W x 4½"H x 6"D	$ 16.15

WALNUT TRIM W/BEIGE PANELS

DW-12	12"W x 4½"H x 10½"D	$ 30.78
JW-10	10¼"W x 2½"H x 6"D	16.30
LW-5	5"W x 3¼"H x 7"D	13.66
LW-6	6"W x 3¼"H x 7"D	15.04
LW-10	10¼"W x 3¼"H x 7"D	18.41
MW-8	4½"W x 8¼"H x 6½"D	19.08
MW-12	4½"W x 12⅜"H x 6½"D	23.28

GREY W/BLACK TOP COVER

TG-24	4¼"W x 1¾"H x 4⅛"D	$ 7.96
TG-26	6¼"W x 1¾"H x 4⅛"D	9.03
TG-28	8¼"W x 1¾"H x 6⅛"D	11.59
TG-36	6¼"W x 3"H x 4⅛"D	10.01
TG-38	8¼"W x 3"H x 6⅛"D	14.41

UNPAINTED

TP-13	3¼"W x 1¼"H x 2½"D	$ 4.18
TP-17	4¼"W x 1¾"H x 3½"D	5.47
TP-20	5"W x 2⅛"H x 4¼"D	5.78
TP-42	5¾"W x 2⅜"H x 4¾"D	6.79
TP-44	6¼"W x 2⅜"H x 5¼"D	7.19
TP-46	7"W x 2⅞"H x 5¾"D	8.74
TP-48	7½"W x 3⅛"H x 6⅛"D	10.23
TP-50	8¼"W x 3⅜"H x 6⅜"D	11.49

BEIGE W/WALNUT TOP COVER

TW-26	6¼"W x 1¾"H x 4⅛"D	$ 9.03
TW-28	8¼"W x 1¾"H x 6⅛"D	11.59

TUBES (TUB)

6146B	Tube .....†,each	$ 19.95	
6JS6C	For Yaesu .....each	24.95	
12BY7A	.....each	14.50	
572B	For Yaesu, etc. .....†,each	79.95	
811A	For Collins, etc. .....each	25.00	

US TOWER (UST)

FREE STANDING CRANK-UPS (T²X not recommended)

TX-438	38' crank-up tower .....T	1019.00	917
TX-455	55' crank-up tower .....T	1539.00	1385
TX-472	72' crank-up tower .....T	2529.00	2276
TX-472MDP	72' crank-up w/motor drive .....T	4069.00	3662
TX-489	89' crank-up tower .....T	4399.00	3959
TX-489MDPL	89' crank-up w/motor drive ....T	6599.00	5939

FREE STANDING HEAVY DUTY CRANK-UP TOWERS

HDX-538	38' crank-up tower .....T	1319.00	1187
HDX-555	55' crank-up tower .....T	2309.00	2078
HDX-572	72' crank-up tower .....T	3959.00	3563
HDX-572MDPL	72' crank-up w/motor drive .T	6049.00	5444
HDX-589MDPL	89' crank-up w/motor drive .T	7919.00	7127
HDX-689MDPL	89' HD crank-up w/motor .....T	16999.95	15299
HDX-5106MDPL	106' HD crank-up w/motor .T	18499.95	16649

COMPACT TMM (Top mount rotor for full retraction)

TMM-433SS	33' crank-up tower .....T	1089.00	980
TMM-433HD	33' HD crank-up tower .....T	1319.00	1187
TMM-541SS	41' crank-up tower .....T	1429.00	1286

ACCESSORIES FOR CRANK-UP TOWERS

CX-2	Coax arms (2) for 2-section tower	$ 49.00	
CX-3	Coax arms (3) for 3-section tower	69.00	
CX-4	Coax arms (4) for 4-section tower	109.00	
CX-5	Coax arms (5) for 5-section tower	149.00	134
HDP	Service platform .....T	739.00	665
IV-16	Inverted vee arm for MA's	33.00	
M-5	2" OD 5' mast extension for MA's	36.00	
M-10	2" OD 10' mast .....T	69.00	
M-15	2" OD 15' mast .....T	103.00	
M-15R	2" OD 15' reinforced mast .....T	155.00	140
M-20	2" OD 20' mast .....T	136.00	122
M-20R	2" OD 20' reinforced mast .....T	205.00	184
CM-20	2" OD 20' .375 wall mast .....T	409.00	368
MD-75	Heavy duty 1 HP motor drive .....T	989.00	890
MDP-750	Pull-down drive; TX-472/HDX-555 T	1539.00	1385
MDPL-1000	Pull-down drive; HDX-572 .....T	2089.00	1880
MRF	Mast raising fixture	239.00	215
MCL-100	Limit switch package	389.00	350
RMC-1000	Remote control w/limit switch	989.00	890
RP-3	Rotor plate for 10" section	18.00	
RP-4	Rotor plate for 12½" section	23.00	

US TOWER - continued

RP-5	Rotor plate for 15" section	29.00	
STS-3	Rotor accessory for TX/TMM towers ...T	189.00	170
TB-2US	Thrust bearing; 2" mast w/2 flange holes ..	89.00	
TRX-80	Raising fixture; TX-438/455;HDX-538/555 ..T	409.00	368
TRX-80HD	Raising fixture;TX-472/489;HDX-572/589 ...T	539.00	485

MA-SERIES TUBULAR TOWERS

MA-40	40' crank-up mast .....†T	$809.00	629
MA-550	55' crank-up mast .....†T	1369.00	999
MA-550MDP	55' crank-up mast w/motor .....T	2909.00	2618
MA-770	70' crank-up mast .....T	2509.00	2258
MA-770MDP	70' crank up mast w/motor .....T	3969.00	3572
MA-850MDP	85' crank-up mast w/motor .....T	5349.00	4814

MA-SERIES ACCESSORIES

CX-2M	Coax arms (2) for MA-40	$ 53.00	
CX-3M	Coax arms (3) for MA-550	79.00	
CX-4M	Coax arms (4) for MA-770	132.00	119
CX-5M	Coax arms (5) for MA-850	159.00	143
MAB-40	Hinged base for MA-40 .....T	359.00	323
MAB-550	Hinged base for MA-550 .....T	429.00	386
MAB-770	Hinged base for MA-770 .....T	519.00	467
MAB-850	Hinged base for MA-850 .....T	629.00	566
MAF-40	Raising fixture for MA-40	209.00	188
MAF-550	Raising fixture for MA-550 .....T	289.00	260
MAF-770	Raising fixture for MA-770 .....T	309.00	278
MAF-850	Raising fixture for MA-850 .....T	409.00	368
MARB-40	Rotor base accessory for MA-40 ...T	549.00	494
MARB-550	Rotor base accessory for MA-550 T	649.00	584
MARB-770	Rotor base accessory for MA-770 T	769.00	692
MARB-850	Rotor base accessory for MA-850 T	909.00	818
MCL-100	Limit switch package	389.00	350
RMC-1000	Remote control w/limit switch	989.00	890

All US TOWER products are drop-shipped (shipped direct to you from the US TOWER factory). On these factory drop-shipments we prefer payment in full with order, however, we will accept your credit card with the understanding that we will process the charge when we order the merchandise from the factory. This means that you may be billed before you receive your drop-shipped merchandise. Shipment is FOB Visalia, California via truck, COD for freight charges only. Freight charges will be collected upon delivery by the carrier. Please allow sufficient time for delivery on these special order products. Most truck lines will not unload the tower for you, so please be sure to have enough manpower and/or equipment on hand when your tower is delivered by the carrier.

UNADILLA (See W2AU)

Universal Towers (UNT)

4-30	4 sq ft wind load 30' alum tower .....T	$335.00	302
9-30	9 sq ft wind load 30' alum tower .....T	451.00	406
12-30	12 sq ft wind load 30' alum tower .....T	593.00	534
21-30	21 sq ft wind load 30' alum tower .....T	704.00	634
23-30	23 sq ft wind load 30' alum tower .....T	932.00	839
35-30	35 sq ft wind load 30' alum tower .....T	1050.00	945
4-40	4 sq ft wind load 40' alum tower .....T	562.00	506
7-40	7 sq ft wind load 40' alum tower .....T	706.00	635
9-40	9 sq ft wind load 40' alum tower .....T	787.00	708
12-40	12 sq ft wind load 40' alum tower .....T	932.00	839
15-40	15 sq ft wind load 40' alum tower .....T	1042.00	938
21-40	21 sq ft wind load 40' alum tower .....T	1157.00	1041
23-40	23 sq ft wind load 40' alum tower .....T	1385.00	1247
4-50	4 sq ft wind load 50' alum tower .....T	792.00	713
5-50	5 sq ft wind load 50' alum tower .....T	900.00	810
7-50	7 sq ft wind load 50' alum tower .....T	1013.00	912
9-50	9 sq ft wind load 50' alum tower .....T	1126.00	1013
15-50	15 sq ft wind load 50' alum tower .....T	1496.00	1346
16-50	16 sq ft wind load 50' alum tower .....T	1614.00	1453
4-60	4 sq ft wind load 60' alum tower .....T	1127.00	1014
6-60	6 sq ft wind load 60' alum tower .....T	1382.00	1244
7-60	7 sq ft wind load 60' alum tower .....T	1471.00	1324
9-60	9 sq ft wind load 60' alum tower .....T	1577.00	1419
3-70	3 sq ft wind load 70' alum tower .....T	1469.00	1322
4-70	4 sq ft wind load 70' alum tower .....T	1805.00	1625
6-70	6 sq ft wind load 70' alum tower .....T	1838.00	1654
7-70	7 sq ft wind load 70' alum tower .....T	1922.00	1729
3-80	3 sq ft wind load 80' alum tower .....T	1920.00	1728
4-80	4 sq ft wind load 80' alum tower .....T	2293.00	2064
2-90	2 sq ft wind load 90' alum tower .....T	2375.00	2138
B-14	Base for tower	60.58	55
B-18	Base for tower	60.58	55

UNIVERSAL - continued

	Reg	Sale
B-22 Base for tower	106.04	95
B-26 Base for tower	136.33	123
RFM-14 Flat roof mt for guyed tower	42.32	38
RFM-18 Flat roof mt for guyed tower	66.69	60
RFM-22 Flat roof mt for guyed tower	99.96	90
RFM-26 Flat roof mt for guyed tower	133.33	120
R-11 Rotor mount	30.27	27
R-14 Rotor mount	45.33	41
R-18 Rotor mount	60.58	55

SEE LITERATURE FOR CONFIGURATION OF TOWERS

11 Top 11" top tower section	T	113.66	102
14 Top 14" top tower section	T	143.22	129
18 Top 18" top tower section	T	259.72	234
14 Taper 14" taper tower section	T	126.00	113
18 Taper 18" taper tower section	T	226.00	203
22 Taper 22" taper tower section	T	337.00	303
26 Taper 26" taper tower section	T	453.00	408
11 Straight 11" straight tower section	T	112.00	101
14 Straight 14" straight tower section	T	126.00	113
18 Straight 18" straight tower section	T	226.00	203
22 Straight 22" straight tower section	T	337.00	303
26 Straight 26" straight tower section	T	453.00	408
HD35-40 35 sq ft wind load 40' alum tower	T	1616.00	1454
HD21-50 21 sq ft wind load 50' alum tower	T	1724.00	1552
HD9-60 9 sq ft wind load 60' alum tower	T	1808.00	1627
HD16-60 16 sq ft wind load 60' alum tower	T	2178.00	1960
HD21-60 21 sq ft wind load 60' alum tower	T	2295.00	2065
HD8-70 8 sq ft wind load 70' alum tower	T	2034.00	1831
HD12-70 12 sq ft wind load 70' alum tower	T	2519.00	2267
HD17-70 17 sq ft wind load 70' alum tower	T	2749.00	2474
HD21-70 21 sq ft wind load 70' alum tower	T	2864.00	2578
HD8-80 8 sq ft wind load 80' alum tower	T	2603.00	2343
HD9-80 9 sq ft wind load 80' alum tower	T	2716.00	2444
HD11-80 11 sq ft wind load 80' alum tower	T	3085.00	2777
HD12-80 12 sq ft wind load 80' alum tower	T	3090.00	2781
HD16-80 16 sq ft wind load 80' alum tower	T	3317.00	2985
HD4-90 4 sq ft wind load 90' alum tower	T	2710.00	2439
HD8-90 8 sq ft wind load 90' alum tower	T	3198.00	2878
HD11-90 11 sq ft wind load 90' alum tower	T	3656.00	3290
HD4-100 4 sq ft wind load 100' alum tower	T	3630.00	3267
HD8-100 8 sq ft wind load 100' alum tower	T	3884.00	3496
B-30 Base for HD tower		212.57	191
RFM-30 Flat roof mt for guyed tower		186.52	168
1-5/8SC Flange bearing		73.70	66
2-3/16SC Flange bearing		96.52	87
Top Plate Flange plate welded to top section		21.24	19

SEE LITERATURE FOR CONFIGURATION OF TOWERS

30 Taper 30" taper tower section	T	570.00	513
30 Straight 30" straight tower section	T	570.00	513
1-1/4" OD x 10 ft aluminum mast	T	30.27	27
1-1/2" OD x 10 ft aluminum mast	T	37.84	34
2" OD x 8 ft aluminum mast		45.41	41
2" OD x 16 ft aluminum mast	T	90.88	82

All UNIVERSAL TOWERS products are drop-shipped (shipped direct to you from the UNIVERSAL TOWERS factory). On these factory drop-shipments we prefer payment in full with order, however, we will accept your credit card with the understanding that we will process the charge when we order the merchandise from the factory. This means that you may be billed before you receive your drop-shipped merchandise. Shipment is FOB Mt. Clemens, Michigan via truck, COD for freight charges only. Freight charges will be collected upon delivery by the carrier. Please allow sufficient time for delivery on these special order products. Most truck lines will not unload the tower for you, so please be sure to have enough manpower and/or equipment on hand when your tower is delivered by the carrier.

VALOR (VAL)

VHF/UHF ANTENNAS ONLY (No Mounts)

PHB-144 2m ⅝ wave 3 db antenna	$ 31.80	
PHB-220 220 ⅝ wave 3 db antenna	31.80	
PUBS-440 440 5 db antenna	33.90	
PAQA 136-515 MHz ¼ wave antenna	8.00	
PAQ-144 2m ¼ wave antenna	8.00	
PAQ-435 440 ¼ wave antenna	8.00	
PAQ-3820 2m ¼ wave whip w/⅜-24 thread	8.00	

MOUNTS ONLY FOR ABOVE ANTENNAS

PAM Low profile magnet mount w/coax	$ 28.40	
PAS ¾" surface mount w/coax	20.00	

VALOR - continued

	Reg	Sale
PASMO ¾" surface mt only (no coax)	7.90	
PAS38 ⅜" surface mount w/coax	20.00	
PAS38MO ⅜" surface mt only (no coax)	7.90	
PAT-2 No hole trunk mount w/coax	27.90	
PAT-3 Swivel NMO-style trunk mt w/coax	35.80	

OTHER VHF/UHF ANTENNAS & MOUNTS

144BNC 2m 12" ¼ wave rubber duck w/BNC	$ 11.00	
220BNC 220 10" ¼ wave rubber duck w/BNC	11.00	
450BNC 440 6½" ¼ wv rubber duck w/BNC	11.00	
BNC-SC Suction cup extension; rubber ducks	21.50	
WMSL-BNC Window clip for rubber ducks	37.90	
82BNC Magnet mt for BNC w/coax	27.00	
100AD 3-way ⅜-24 mount w/SO-239 D	7.20	
101ADN HD alum mirror mt w/SO-239	7.20	
116N Gutter mt for ⅜-24 up to 48"	9.40	
301 ⅜-24 magnet mt only w/coax	22.40	
401 Low profile ⅜-24 mag mt only w/coax	27.80	
DAK Mt for 2 vert ants or horizontal dipole	13.80	
GM-100AD SS GM ⅜-24 mirror mt w/SO-239	10.60	
GM-100ADT Alum GM ⅜-24 mirror mt, /SO-239	10.60	
MM-3401 Maxi-mag mt ⅜-24 kit (3-5" mags)	59.90	49.95
SS-100MOT 3-way NMO mirror mt w/coax	23.80	
CX-144 2m ⅝ wave 3 db ⅜-24 whip	17.90	
CX-220 220 ⅝ wave 3 db ⅜-24 whip	17.90	
PAQM 144-450 MHz ¼ wave BNC mag ant	28.80	
PM-144BN 2m/440 BNC antenna	33.90	
TGS 30-1200MHz on-glass scanner ant	45.90	
VAA-002 144-450 MHz ¼ wave mag mt ant	23.80	19.95
VAA-002BN 144-450 MHz ¼ wv BNC mag ant	27.80	22.95
DB-240 2m/440 base station antenna	93.00	79.95
120 Sawtooth hump mt for mobile radios	5.60	

MOBILE HF ANTENNAS (No Mounts)

AB-5 75/40/20/15/10m antenna	$119.60	
PHF-160 160m 8' ⅜-24 whip	97.80	
PHF-75 75m 8' ⅜-24 whip (4' coil, 4' whip)	29.80	
PHF-40 40m 8' ⅜-24 whip (4' coil, 4' whip)	23.80	
PHF-20 20m 8' ⅜-24 whip (4' coil, 4' whip)	23.80	
PHF-15 15m 8' ⅜-24 whip (4' coil, 4' whip)	23.80	
PHF-10 10m 8' ⅜-24 whip (4' coil, 4' whip)	23.80	

VANCO (VCO)

SWR-1 SWR/field strength meter	$ 36.14	19.95
SWR-2 SWR/power/field strength meter	50.15	29.95
SWR-3 Mini SWR meter	21.68	14.95

VAN GORDEN (VAN)

Hi-Q 1:1 balun	$ 14.95	
Hi-Q 4:1 balun	14.95	
Antenna center insulator	6.95	
Antenna end insulator each	3.95	
Dog bone type antenna insulator each	.50	
NR-100 Nylon antenna guy rope 100 ft.	4.49	
NR-1,000 Nylon ant guy rope 1,000 ft.	43.95	
D-80 80m wire dipole antenna	31.95	
SD-80 Short 80m dipole	35.95	
D-40 40m wire dipole antenna	28.95	
SD-40 Short 40m dipole	33.95	
D-20 20m wire dipole antenna	27.95	
D-15 15m wire dipole antenna	26.95	
D-10 10m wire dipole antenna	25.95	
All Bander Dipole 160-10m ant (needs tuner)	29.95	
G5RV Flat-top 5-band 102' antenna w/cable	49.95	
450 ohm insulated ladderline 100 ft.	12.00	
450 ohm insulated ladderline 1,000 ft.	110.00	

VIBROPLEX (VIB)

Original Presentation Super Deluxe bug	$195.00	184.95
Original Deluxe bug	120.00	
Original Standard bug	99.00	
VibroKeyer Deluxe paddle	115.00	109.95
VibroKeyer Standard	89.00	
Iambic Paddle Presentation	160.00	
Iambic Paddle Deluxe	115.00	
Iambic Paddle Standard	95.00	
EK-1 Brass Racer Iambic keyer w/paddle	145.00	139.95
Brass Racer Iambic paddle	65.00	

VOCOM (VOC)

2m 5/8 wave telescopic whip ant w/BNC	$ 19.95	

W2AU (Unadilla) (W2A)

W2AU 1:1 80-10m balun, lightning arrestor	$ 19.95	
W2AU Beam Balun, 1:1	19.95	
W2AU 4:1 80-10m balun, lightning arrestor	19.95	
W2DU-HF 1:1 1.8-30 MHz choke balun	21.95	
W2DU Beam Balun 40-10m 1:1 choke balun	21.95	
W2DU-VHF 1:1 30-250 MHz choke balun	21.95	
HA AN-sulator center insulator	7.95	
HE END-sulator end insulators pair	3.50	
KW-80CW Reyco 80m CW ant traps pair	43.50	
KW-80F Reyco 75m phone ant traps pair	43.50	
KW-40 Reyco 40m antenna traps pair	40.00	
KW-30 Reyco 30m antenna traps pair	40.00	
KW-20 Reyco 20m antenna traps pair	39.00	
KW-17 Reyco 17m antenna traps pair	39.00	
KW-15 Reyco 15m antenna traps pair	39.00	
KW-12 Reyco 12m antenna traps pair	39.00	
KW-10 Reyco 10m antenna traps pair	39.00	
W2AU/W2VS 5-band ant kit (use tuner)	75.00	69.95

W5YI Books (W5Y)

HRH Ham Radio Handbook	$ 9.95	
HRH/S Ham Radio Handbook w/IBM software	19.95	
HOS Ham Operator IBM Software	29.95	
LHB Licensing Handbook	9.95	

WABER AC OUTLET STRIPS (WAB)

3SP 3 outlet/breaker/switch/light	$ 16.60	
4S 4 outlet/breaker/switch	16.60	
5 5 outlet w/breaker	16.60	
6SP 6 outlet/breaker/switch/light	19.95	
7S 7 outlet/breaker/switch	19.95	
8 8 outlet w/breaker	19.95	

WAHL (WAH)

7540 Cordless soldering iron kit	$ 34.95	29.95
7740 Quick charge cordless soldering iron kit	39.95	34.95

WELLER (WEL)

7200PK 75w soldering gun kit	$ 31.38	24.95
EC-1002-1 40w temp controlled solder stn	263.38	169.95
WP-25P 25w pencil-type soldering iron D	28.72	
WP-25 25w professional soldering iron	35.30	
W-60P 60w temp controlled soldering iron	67.78	49.95
W-100PG Hvy duty 100w temp controlled iron	69.86	49.95
WCC-100 40w soldering station Δm	127.36	49.95
WTCPS 60w temp controlled soldering stn D	132.90	99.95
WTCPT 60w temp controlled soldering stn	159.16	99.95
WSTA3 Pyropen portable LP soldering iron	106.86	69.95
WST2 Pyropen Jr. portable butane iron	85.78	59.95

YAESU (YAE)

FT-1000 Xcvr w/ps/tuner/keyer/mic/XF-AB	3499.00	2798
BPF-1 Dual bandpass filter; crossband rcv	159.00	149.95
TCXO-1 Temperature compensated xtal osc	229.00	209.95
XF-C 2.4 KHz SSB xtal filter (455 KHz)	149.00	139.95
XF-D 2 KHz SSB xtal filter (455 KHz)	149.00	139.95
XF-E 500 Hz CW xtal filter (455 KHz)	149.00	139.95
FT-1000D Dlx Xcvr w/BPF/TCXO/XF-ABCDE	4499.00	3598
DVS-2 Digital voice recording module	299.00	269.95
FIF-232C Interface for RS-232	95.00	89.95
MD-1C8 Desk microphone	115.00	109.95
SP-5 External spkr w/audio filter	149.00	134.95
LL-5 Phone patch unit for SP-5	139.00	129.95
XF-455MC 600Hz CW filter (455KHz); subrcvr	159.00	149.95
XF-F 250 Hz CW xtal filter (455 KHz)	159.00	149.95
YH-77ST Open-air type stereo headphones	52.00	
FT-990DC Xcvr w/tuner & mic	1999.00	1598
FP-800 20A heavy duty ps for FT-990DC	299.00	269.95
XF-109C 500 Hz CW filter for FT-990DC	127.00	119.95
FT-990 Xcvr w/ps/tuner/mic/CW filter	2399.00	1898
DVS-2 Digital voice recording module	299.00	269.95
FIF-232C Interface for RS-232	95.00	89.95
MD-1C8 Desk microphone	115.00	109.95
SP-6 External speaker w/filter	149.00	134.95
LL-5 Phone patch unit for SP-6	139.00	129.95
TCXO-2 Temp compensated xtal oscillator	199.00	189.95
XF-10.9M-202-01 2nd IF 2 KHz SSB filter	129.00	119.95
XF-455K-251-01 2nd IF 250 Hz CW filter	159.00	149.95
YH-77ST Open-air type stereo headphones	52.00	

YAESU - continued

	Reg	Sale
FT-767GX Xcvr/.1-29.99 Rcvr/ps/tuner	2068.00	1698
2M/767 (FEX-767-2M) 2m module	239.00	219.95
6M/767 (FEX-767-6M) 6m module	196.00	179.95
430/767 (FEX-767-70B) 430-440 module	296.00	269.95
440/767 (FEX-767-70A) 440-450 module	296.00	269.95
FIF-232C Interface for RS-232	95.00	89.95
FTS-8 Encoder/decoder	55.00	
MD-1C8 Desk microphone	115.00	109.95
MH-1B8 Extra hand microphone	29.00	
SP-767 Speaker w/audio filters	99.00	
SP-767P Speaker/patch	136.00	129.95
FT-890 Xcvr/.1-30 MHz Rcvr w/mic	1339.00	1089
ATU-2 Internal antenna tuner	209.00	189.95
FT-890/AT Xcvr/.1-30 MHz Rcvr/tuner/mic	1529.00	1229
FP-800 20A heavy duty power supply	299.00	269.95
DVS-2 Digital voice recording module	299.00	269.95
FC-800 External auto antenna tuner	469.00	419.95
FIF-232C Interface for RS-232	95.00	89.95
FRB-757 External relay box	14.00	
MD-1C8 Desk microphone	115.00	109.95
MH-1B8 Extra hand microphone	29.00	
MMB-20 Mobile mount	26.00	
SP-6 External speaker w/filter	149.00	134.95
LL-5 Phone patch unit for SP-6	139.00	129.95
SP-7 Mobile speaker	34.00	
TCXO-3 TCXO unit	99.00	
XF-455K-251-01 2nd IF 250 Hz CW filter	159.00	149.95
YF-100 2nd IF 500 Hz CW filter	124.00	119.95
YF-101 2nd IF 2.6 KHz SSB filter	159.00	149.95
YH-77ST Open-air type stereo headphones	52.00	
FT-747GX Xcvr/SW Rcvr/CW filter/mic	899.00	729.95
FP-757HD Heavy duty supply/fan/spkr	309.00	279.95
FP-700 Power supply	244.00	219.95
FAS-1-4R Remote antenna selector	120.00	109.95
FC-757AT Auto antenna tuner w/memory	429.00	389.95
E-767 Cable for FC-757AT w/FT-747GX	11.00	
FM-747 FM unit	47.00	
MD-1C8 Desk microphone	115.00	109.95
MH-1B8 Extra hand microphone	29.00	
MMB-38 Mobile mounting bracket	14.00	
RMK-747 Remote kit	204.00	189.95
SP-767 Speaker w/audio filters	99.00	
TCXO-747 Increased freq stability unit	42.00	
FL-7000 Solid state amp w/auto ant tuner	2279.00	1979
CT-11 Cable - FL-7000 to FT-890	14.00	
E-767 Cable - FL-7000 w/FT-767GX/990	11.00	
FAS-1-4R Remote antenna selector	120.00	109.95
FRG-8800 150 KHz-29.999 MHz SW Rcvr	784.00	689.95
DC-8800 DC kit for FRG-8800	4.00	
FF-5 500 KHz low-pass filter (for VLF) ..Dm	40.00	19.95
FIF-232C Interface for RS-232	95.00	89.95
FM-W/8800 FM-wide kit for FRG-8800	21.00	
FRA-7700 Indoor active receive antenna	58.00	
FRT-7700 Antenna tuner	77.00	
FRV-8800 118-174 MHz VHF converter	107.00	99.95
FRG-100B .1-30 MHz shortwave receiver	599.00	519.95
FF-501DX Low pass filter ....Dm	47.95	29.95
YH-55 Lo-Z headphones	28.00	
YH-77 Lightweight headphones	26.00	
YS-60 1.8-60 MHz 2kw PEP wattmeter	127.00	119.95
YS-500 140-520 MHz 200w PEP wattmeter	99.00	
FT-650 100w 12/10/6m Xcvr w/ps	1599.00	1298
DVS-2 Digital voice recording module	299.00	269.95
MD-1C8 Desk microphone	115.00	109.95
SP-5 External spkr w/audio filter	149.00	134.95
LL-5 Phone patch unit for SP-5	139.00	129.95
XF-455M6 600 Hz CW filter	159.00	149.95
FT-736R 25w 2m/430 full dplx Xcvr w/mic	1999.00	1649
AD-3 100w 2m/440 duplexer	48.00	
E-736 DC cable	10.00	
FEX-736-50 6m module	294.00	269.95
FEX-736-220 220 MHz module	322.00	289.95
FEX-736-1.2 1.2 GHz module	589.00	529.95
FIF-232C Interface for RS-232	95.00	89.95
FMP-1 AQS digital message display ...Dmw	187.00	89.95
FTS-8 Encoder/decoder	55.00	
FVS-1A Voice synthesizer	37.00	
Keyer-B Electronic keyer unit	19.00	
MD-1C8 Desk microphone	115.00	109.95
MH-1B8 Extra hand microphone	29.00	

YAESU - continued

	Reg	Sale
SP-767 Speaker w/audio filters	99.00	
TV-736 1.2 GHz ATV converter	163.00	149.95
FT-690R Mk II 10w 6m FM/SSB Xcvr/TTP	799.00	669.95
FT-290R Mk II 25w 2m FM/SSB Xcvr/TTP	659.00	569.95
FT-790R Mk II 25w 430-450 FM/SSB/TTP	759.00	649.95
CSC-19 Soft case	19.00	
FBA-8 Holder for 9 C-cell nicads	32.00	
NC-26B Wall charger for FBA-8	10.00	
FTS-7A Encoder/decoder; current units	41.00	
MH-10E8 Hand microphone	24.00	
FT-5100 50/35w 2m/440 FM Xcvr/TTP mic	695.00	569.95
FT-5200 50/35w 2m/440 FM Xcvr/TTP mic	769.00	639.95
FT-6200 35/10w 440/1.2GHz FM Xcvr/TTP	799.00	669.95
DVS-3 Digital voice memory unit	129.00	119.95
FRC-4 DTMF pager unit	34.00	
FTS-22 CTCSS decode unit	54.00	
MH-27B8 Extra TTP microphone	55.00	
MW-1 Wireless remote control microphone	109.00	104.95
MMB-53 Mobile mtg bkt for MW-1	7.00	
SP-7 External speaker	34.00	
YSK-1L Sep kit w/18' cable; FT-5200/6200	59.00	

YAESU HOLIDAY COUPONS

Purchase Yaesu merchandise of over $250 & take extra $25 off; or purchase Yaesu gear of over $1000 & take extra $100 off; 10/31/92 - 1/4/93. Phone orders also OK, but you must actually fill out a coupon and mail it in to enter the Yaesu Dream Station drawing.

	Reg	Sale
FT-212RH/C8 45w 2m FM Xcvr w/TTP mic	405.00	339.95
FT-712RHT/C8 35w 440 FM Xcvr/TTP mic	497.00	419.95
FT-912RH 10w 1.2 GHz FM Xcvr w/TTP mic	581.00	489.95
AD-3 100w 2m/440 duplexer	48.00	
DVS-1 Digital voice memory module	105.00	99.95
FTS-12 Decoder; 212RH/712RH/912RH	55.00	
MH-15C8 Extra TTP microphone	54.00	
MH-15D8 Autodial TTP microphone	80.00	
FT-2400H 50w 2m FM Xcvr w/TTP mic	439.00	359.95
FT-7400H 35w 440 FM Xcvr w/TTP mic	TBA	
2400 Mic Cable 2' packet cable	8.00	
FRC-6 DTMF pager unit	34.00	
FTS-17A CTCSS decode unit	53.00	
SP-7 External speaker	34.00	
SP-3 Small mobile speaker	17.00	
SP-4 Mobile speaker	22.00	

Accessories for 09-series/03-series

	Reg	Sale
FNB-4A 500ma 12v battery	$ 65.00	
FTS-6 Encoder/decoder; 09-series ....Dm	53.00	
MMB-21 Mobile bracket ....Dm	16.00	
NC-9B Wall charger for FNB-3/3A ....Dmfv	11.00	
NC-15 Desk quick charger/AC ps ....Dm	97.00	
PA-3 Mobile adapter and charger ....Dm	28.00	
FT-26/25 2w 2m FM HT/batt/cgr	299.00	249.95
FT-26/27 5w 2m FM HT/batt/cgr	329.00	274.95
FT-76/25 2w 440 FM HT/batt/cgr	329.00	279.95
FT-415 2w 2m FM HT/batt/cgr/TTP	409.00	339.95
FT-530 2m/440 FM HT/batt/cgr/TTP	539.00	439.95
FT-815 2w 440 FM HT/batt/cgr/TTP	439.00	369.95
CLIP-3 Belt clip	5.00	
CSC-50 Vinyl case; 415/815 w/FNB-25	19.00	
CSC-52 Vinyl case; 415/815 w/FNB-26/27	19.00	
CSC-53 Vinyl case; 26/76 w/FNB-25	19.00	
CSC-55 Vinyl case: 26/76 w/FNB-26/27	19.00	
CSC-56 Vinyl case; 530 w/FNB-25	19.00	
CSC-58 Vinyl case; 530 w/FNB-26/27	19.00	
EDC-5 DC adapter w/noise filter	19.00	
EDC-6 DC adapter	10.00	
FBA-12 AA cell holder	19.00	
FNB-25 600ma 7.2v nicad battery	49.00	
FNB-26 1000ma 7.2v nicad battery	79.00	
FNB-27 600ma 12v nicad battery (5w)	79.00	
FTS-17A CTCSS encode/decode unit	53.00	
MH-12A2B Speaker/microphone	36.00	
MH-18A2B Compact lapel speaker/mic	29.00	
MH-19A2B Earpiece/microphone	31.00	
MH-29A2B LCD display spkr/mic; 530	99.00	
MMB-49 Mobile mounting bracket	16.00	
MMB-54 Mobile mounting bracket; 530	16.00	
NC-18B Wall charger for FNB-27	11.00	

YAESU - continued

	Reg	Sale
NC-28B Wall charger for FNB-25/26	11.00	
NC-42 1 hour desk quick charger	99.00	
YH-2 Lightweight VOX headset w/mic	30.00	
FT-23R-17 2.5w 2m FM HT/FNB-17/cgr	290.00	239.95
FT-23R-12 5w 2m FM HT/FNB-12S/cgr	309.00	249.95
FT-33R 5w 220 FM HT/batt/cgr	328.00	279.95
FT-411E 2.5w 2m FM HT/batt/cgr/TTP	355.00	299.95
FT-811 2w 440 FM HT/batt/cgr/TTP	394.00	329.95
FT-470 2.3w 2m/440 FM HT/batt/cgr/TTP	499.00	389.95
FT-911 1w 1.2 GHz FM HT/batt/cgr/TTP	489.00	399.95

Accs for FT-23R/33R/73R/411E/811/470/911

	Reg	Sale
CLIP-1 Belt clip	$ 5.00	
CSC-22 Soft case; 23R w/FNB-9/FBA-9 .Dmw	16.00	2.95
CSC-23 Soft case; 23R w/FNB-10/FBA-10 ...Dv	16.00	2.95
CSC-24 Soft case; 23R w/FNB-11	19.00	
CSC-26 Soft case; 23R/TTP w/FNB-11 ...Dwfv	16.00	2.95
CSC-28 Soft case; FT-23R w/FNB-12S	19.00	
CSC-35 Soft case; FT-411E w/FNB-17	19.00	
CSC-36 Soft case; 411E w/FNB-10/FBA-10 ..Δv	19.00	6.95
CSC-37 Soft case; FT-411E w/FNB-12S/14	19.00	
CSC-43 Soft case; FT-470 w/FNB-9/17	19.00	
CSC-44 Soft case; FT-470 w/FNB-10 ....Δw	19.00	9.95
CSC-45 Soft case; FT-470 w/FNB-12S/14	19.00	
CSC-46 Soft case; FT-470 w/FNB-11 ....Δf	19.00	9.95
CSC-48 Soft case; 23R w/FNB-17	19.00	
FBA-9 AAA battery holder	12.00	
FBA-17 AA battery holder	12.00	
FNB-9 200ma 7.2v battery ....Dm	37.00	19.95
FNB-12S 600ma 12v (5w) battery	64.00	
FNB-14 1000ma 7.2v battery	62.00	
FNB-17 600ma 7.2v battery	45.00	
FTS-12 Encoder/decoder for FT-23R/33R/73R	55.00	
FTS-17 Tone squelch/pager unit; 411E ....Dmv	53.00	39.95
FTS-17A Tone squelch/pager; FT-411E	53.00	
FTT-4 DTMF (TTP) unit for FT-23R	44.00	
MH-12A2B Speaker/microphone	36.00	
MH-18A2B Compact lapel speaker/mic	29.00	
MH-19A2B Earpiece/microphone	31.00	
MMB-32A Mobile hanger; not for FT-470	13.00	
MMB-46 Mobile hanger for FT-470	14.00	
NC-18B Wall charger for FNB-12S	11.00	
NC-27B Wall charger for FNB-9 ....Dwfv	11.00	2.95
NC-28B Extra wall charger for FNB-9/10/17	11.00	
NC-29 Desk quick cgr; FNB-12S/14/17	65.00	
NC-34B Wall charger for FNB-14	11.00	
NC-37 1-hour desk cgr; FNB-12S/14/17	99.00	
PA-6 Mobile DC adapter/cgr; FNB-9/10/14/17	22.00	
PA-7 Battery extension cable	30.00	
YH-2 Lightweight VOX headset w/mic	30.00	

Accessories for FT-208R/708R

	Reg	Sale
FNB-2A Nicad battery pack	$ 30.00	
YM-24A Speaker/microphone ....Dm	39.95	

ANTENNA ROTORS

	Reg	Sale
G-250 Light duty 4 sq ft rotor	$111.00	106.95
G-400RC Light/medium duty 11 sq ft rotor	242.00	219.95
G-500A 12 sq ft elevation rotor	249.00	229.95
G-800S Med/hvy duty 450 degree 21 sq ft	322.00	289.95
G-800SDX Med/hvy duty 21 sq ft w/presets	390.00	349.95
G-1000SDX HD 450 degree 23 sq ft w/presets	466.00	419.95
G-2700SDX HD 450 degree 34 sq ft w/presets	999.00	899.95
G-5400B Light/med 11 sq ft az/el combo	497.00	449.95
Sep Kit Separation kit for G-5400B	21.00	
GC-038 Mast clamp; 400/800/1000/5400B	21.00	
GC-048 Mast clamp; G-2700SDX	36.00	
GS-050 50mm thrust bearing; mast 1¼-2"	25.00	
GS-065 65mm thrust bearing; mast 1½-2½"	39.00	

See BELDEN for rotor cable

ZENITH (ZEN)

	Reg	Sale
A-8477 75 ohm high-pass filter ....D*		9.95

HELP WANTED

SPANISH SPEAKING PERSON for our Wickliffe, Ohio Store

Must have Ham License. Good benefits, will consider helping with moving expenses.

Shown above is P. J. Jun WA6IBY, the owner of JUN'S Electronics who's store we visited when we attended the National A.R.R.L. Convention in L.A. in August of 1992. The Gang from AES always enjoys visiting with Mr. Jun. This trip we were particularly impressed with his new, larger store located near the airport in Culver City, CA.

Shown above is Dave Phemister WB7ESV, Engineer for LARSEN Electronics operating 2 meters from the AES Starship after the Seaside Hamfest in June 1992.

Shown here is Tom Gettelman W9IZO, a famous former resident of Wisconsin. He now resides in the Seattle, Washington area and we had the pleasure of him co-piloting the Starship when we visited ICOM this summer. Tom started Terry W9DIA flying in the late 1950's by taking him to the Dayton Hamvention in a Cessna 180. That flight took just 2 hours instead of the usual 12 hour drive.

Shown above is a Sterman StarShip with what what we call a "Baby Starship". While visiting the 1992 Santa Barbara Hamfest this summer, we bumped into a former employee, Bill Theeringer W8PEY. Bill built the "Baby Starship" above from a set of plans and has installed both HF and VHF ham rigs. In the next flyer or catalog we'll have a full page devoted to Bill and his plane.

VAN GORDEN

SHORTY ALL-BANDER ANTENNA

THE PERFECT MATCH FOR ANTENNA TUNERS WITH A BALANCED OUTPUT . . .

- Covers 160 through 10 meters with proper antenna tuner
- Handles 2 KW PEP.
- Overall length **only 70 feet** – or less when erected as an inverted vee or sloper configuration.
- May be trimmed to fit small city lots.
- Small, lightweight, weatherproof, sealed shorteners with stainless steel eyelets.
- Heavy 14 (7/22) gauge stranded copper antenna wire to survive those severe storms.
- Center fed with 100 ft. of low loss 450 Ω balanced feed line.
- Includes center insulator with an eye hook for center support.
- Includes custom molded insulators made of top quality material with high quality dielectric qualities and excellent weatherability.
- Completely factory assembled, ready to use.
- Complete installation instructions included.

Only $29.95

Closeout & Specials . . .

Hot! ALINCO CLOSEOUTS

Low Prices & Discount Coupons*

For a limited time ALINCO is accepting various DISCOUNT Coupons on their products. See the back page of this catalog for more information.

DJ-560T/A 2m/70cm Twin Band Handheld • Receives 130-173.995 and 400-520MHz. 2.5W, 5W optional. Full duplex, 40 memories; 21 scan modes, autodialer, tone and DTMF encode/decode. 6½"h x 2¼"w x 1¼"d, 0.82 lbs. Regular. $329.95

CLOSEOUT with Coupons $299.95

DJ-120T 2m Handheld • Covers 144-148MHz tx/rx. 2.5W, 6.5W w/opt. battery. LCD display, 10 memories, call channel, S-meter, function indicator, battery saver, built-in tone encoder. 6½"h x 2⅜"w x 1⅛"d, 0.97 lbs. Regular. $199.95.

CLOSEOUT with Coupons $179.95

AZIMUTH

ALT-6 Weather Computer

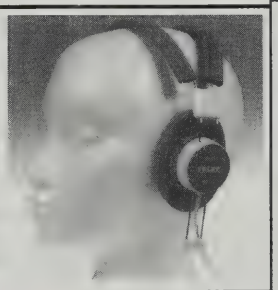
CLOSEOUT

$199.95

A personal weather computer unit with external temperature sensor and anemometer.Shows: Barometric Pressure; Altitude; Wind Speed; High Wind Gust; Inside & Outside Temperatures, Wind Chill, High & Low Temperatures; Rainfall with opt. Collector . more! Battery powered. 2.7" x 5" x 1.3".

TELEX

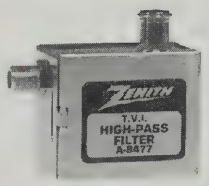
610-1 Headsets



Soft, cushioned earphones fully adjustable for a comfortable fit. Blue and white. 600Ω Impedance; works fine with most radios. Comes with 54" straight cord with molded standard 1/4" plug.... **Closeout $9.95**

Inexpensive TVI Cure . . .

ZENITH A-8477 High Pass Filter



Protects TV sets from harmonic interference from transmitters operating 6 to 160 meters. More than 45dB attenuation at 52 MHz & lower. For 75Ω systems, TV type-F connectors. 2" x 1¾" x 1" **$9.95**

RANGER

RCI-2950

10m Multi-mode Transceiver for Base or Mobile

- Worldwide DX
- Local Clubs & Nets
- Repeaters . . more!

$259.95

Features: Full coverage 28.0 to 29.6999MHz • 25W Out on SSB (12W CW, 8W AM/FM) • Large, backlit LCD Display shows RF Output, Receive Signal Strength, Modulation, SWR Calibration and SWR • Built-in multi-step dual VFO • 10 programmable frequencies with battery back-up • ± Offsets for Repeater Operation • RIT • Squelch • Noise Blanker • RF Gain • RF Power Output Selector • PA Mode with External Speaker Jack • Includes microphone with Up/Down frequency control buttons • 1½"h x 8"w x 10½"d, 6 lbs. 13.8V DC @ 5A.

New! RCI -2970 • 100 Watt version of RCI-2950 with similar features **$399.95**

KENWOOD

TH-27A and TH-47A

CLOSEOUT

2.5W (27A) and 1.5W (47A) extended operation with standard 7.2V @700ma battery pack (5W output with optional battery pack). Multifunction band and memory channel scanning with time or carrier operated stop. Selectable step tuning. Built-in digital clock with programmable timer. Auto battery saver and power off, economy mode. DTMF memory function may be used as an handy autodialer. CTCSS encode/decode built-in. 2"w x 5"h x 1½"d, 0.8 lb.

TH-27A • 2 Meters: 118-165MHz rx (includes. aircraft band), 144-148MHz tx.. Mod. for MARS/CAP. **List $419.95**

TH-47A • 440MHz: Covers 438-449.995MHz. **List $419.95**

CLOSEOUT $299.95 each model

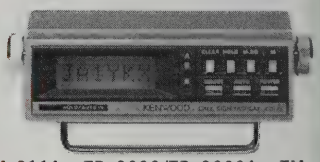
KENWOOD

CD-10

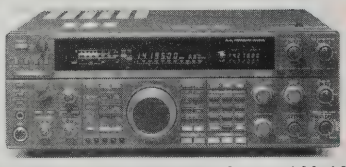
Call Sign Display

$49.95

CLOSEOUT



For KENWOOD's TM-211A, TR-2600/TR-3600A, TM-2530A/50A/70A, TM-3530A, TS-711A/811A, TR-751A/851A. When receiving signals from other DCL/DCS equipped transceivers, the CD-10 will decode the digital ASCII call sign data that is a portion of the Digital Coded Squelch (DCS) data string, and show it on the alphanumeric display. Stores 20 different call signs in resident battery-backed memory. Two inputs; works with more than one unit at a time. Serial port for PC interface for automatic logging, etc.



KENWOOD

TS-950SD HF Transceiver

$2998

CLOSEOUT

All-mode HF transceiver. Covers 160-10M with 100kHz-30MHz receiver and built-in antenna tuner. 150W output. DSP technology! Dual receive, 100 memories, memory scan and programmable band scan. Speech processor, QSK or semi-break-in. RIT/XIT, VBT, IF slope, CW tune, IF notch, digital AF filter. Multi-function fluorescent display, a bar meter with peak hold. Electronic keyer, high stability TXCO Filters: 1st/2nd IF-500Hz,, 2nd IF - 250Hz, 6kHz AM and 2.4kHz SSB. Programmable tone, computer interface. Built-in power supply and speaker. 5.5"h x 15.8"w x 15.75"d, 50.7 lbs.

MasterCard VISA DISCOVER AMERICAN EXPRESS

"Se Habla Español"

EDDIE KD4RAZ ORLANDO Store

NATHAN KN4BJ ORLANDO Store

JIM N4LIO ORLANDO Store

BILL KAØSEP Milwaukee Store

Spanish and German

VICTOR N4COU Clearwater Store

BOBBY N7XE LAS VEGAS Store

HELP WANTED • A Spanish Speaking Person to work in our Wickliffe, Ohio store. Good Benefits, will consider helping with moving expenses.

AES® Store Locations

	Phone	Toll Free	FAX
Milwaukee, WI 53223; 5710 W. Good Hope Road	(414) 358-0333	1-800-558-0411	(414) 358-3337
Wickliffe, OH 44092; 28940 Euclid Avenue	(216) 585-7388	1-800-321-3594	(216) 585-1024
Orlando, FL 32803; 621 Commonwealth Avenue	(407) 894-3238	1-800-327-1917	(407) 894-7553
Clearwater, FL 34625; 1898 Drew Street	(813) 461-4267		(813) 443-7893
Las Vegas, NV 89106; 1072 N. Rancho Drive	(702) 647-3114	1-800-634-6227	(702) 647-3412

Watch for Future AES® Branch Store Openings!

PHONES

COBRA (COB)

	Reg	Sale
46/49 MHz CORDLESS PHONES		
CP-468 Pearl/redial/tone/pulse .....Dm	$119.95	59.95
CP-473 2-line/mem/select ch/page .....Dm	239.95	89.95
CP-478 Ivory/spkrphone/redial .....Dmf	139.95	69.95
CP-480 Ivory/paging/built in antenna .....Df	129.95	64.95
CP-483 Pearl/room monitor/intercom .....Dm	199.95	99.95
CP-484 Ivory/room monitor/intercom .....Dm	199.95	99.95
CP-485 Ivory/monitor/built in antenna ...Dmf	209.95	99.95
CP-486 Intenna/redial/tone/pulse .....Df	109.95	59.95
CP-492 2-line/hold/page/volume control	179.95	109.95
CP-701 9# mem/page/redial/intenna	99.95	69.95
CP-703 Cellular style/page/backlit	119.95	79.95
CP-711 Cellular style/selectable channels	129.95	89.95
WIRED PHONE		
ST-512 9 mem tone/pulse phone .....Dw	$ 34.95	9.95
TELEPHONE ANSWERING MACHINES		
AN-8534 Ans mach/rem/VOX/9# mem ph Dmw	$ 99.95	54.95
AN-8526 Ans machine w/cordless phone	269.95	149.95
AN-8560 Ans machine w/personal memo	69.95	44.95
AN-8563 Ans machine w/microchip	89.95	59.95
AN-8566 Ans machine w/9# mem phone	129.95	79.95

SCANNERS & MONITORS

Antenna Specialists (ASP)

MONR1 H or U low profile roof mt monitor ant .	$ 23.50	
MON-9 H & U magnet mt monitor antenna	35.25	
MONR31 L/H/U gain ground plane base ant ..	55.25	

BMI (BMI)

Nitelogger Automatic recorder activator	$ 69.95	

CHANNEL MASTER (CHA)

5094A 4-band base Monitenna ant w/50' coax .	$ 44.99	39.95
5095A Kit w/5094A ant, 5' tri-mast, 50' coax	55.99	49.95

COBRA (COB)

SR-900 16 ch programmable scanner	$179.95	99.95
SR-11 10 ch prog pocket scanner	219.95	129.95
SD-1E Eastern U.S. frequency book	14.95	
SD-1W Western U.S. frequency book	14.95	

GROTHE (GRO)

VS-2 Emergency vehicle siren	$ 99.00	89.95
VS-3 Volunteer vehicle PA/horn w/spkr	159.00	129.95
VS-4 P/A emergency vehicle siren w/spkr	169.00	139.95

MAXON (MAX)

WX-3 Weather receiver w/alert & ps	$ 59.95	39.95

OFFICIAL (OFF)

Aeronautical Frequency Directory	$ 24.95	
Maritime Frequency Directory	24.95	

REGENCY (REG)

MA-917 Battery pack; HX-1000/1200	$ 29.95	

UNIDEN BEARCAT (UNI)

BC-177XLT 16 ch prog scanner w/air .....Dfv	$249.95	149.95
BC-560XLT 16 ch mobile prog scanner .....D	179.95	119.95
BC-590XLT 100 ch mobile prog/svc search .D	399.95	229.95
BC-001 RF preamp for BC-590XLT .....Δ	13.40	
BC-002 CTCSS tone board; BC-590XLT	62.99	
BC-003 Switch box for BC-002	10.70	
BC-147XLT 16 ch prog scanner/instant WX ...	189.95	99.95
BC-210XLT 40 ch prog scanner/air/instant WX	249.95	149.95
BC-560XLA 16 ch prog scanner w/AC ps	179.95	119.95
BCT-2 Pre-prog mobile warning scanner	266.50	199.95
BC-760XLT 100ch mobile prog/svc search/800	499.95	289.95
BC-002 CTCSS tone board; BC-760XLT	62.99	
BC-004 RF preamp for BC-760XLT	27.80	
BC-800XLT 40 ch prog scanner w/800 MHz ...	449.95	249.95
BC-855XLT 50 ch prog scanner w/800 MHz ...	339.95	199.95
BC-55XLT 10 ch prog pocket scanner	179.95	119.95
AD-100 AC adapter/batt cgr; BC-50/55	17.70	
PS-001 DC power cord; BC-50/55XLT	5.95	
VC-001 Carrying case; BC-50/55XLT	9.00	
BC-65XLT 10 ch prog pocket scanner	229.95	169.95
BC-70XLT 20 ch prog pocket w/battery	289.95	159.95
AD-70 Extra charger for BC-70XLT	16.35	
BP-70 Extra battery for BC-70XLT	27.80	

UNIDEN - continued

	Reg	Sale
UA-502 Cig power cord for BC-70XLT	11.25	
BC-100XLT 100 ch prog pocket w/aircraft	329.95	179.95
BC-200XLT 200 ch prog pocket w/800 MHz ...	459.95	259.95
AD-140 Extra charger; BC-100XLT/200XLT .	18.24	
BP-200 Extra battery; BC-200XLT	32.82	
BP-205 Extra battery; BC-100XLT	37.23	
PS-001 DC power cord; BC-100XLT/200XLT	5.95	
Diamond **RH-77B** 15" rubber gain ant	32.95	29.95
FB-E Eastern U.S. frequency book	14.95	
FB-W Western U.S. frequency book	14.95	
NPD-001 National frequency book	14.95	
RFD-001 IN/IL/KY/OH/MI/WI freq book	14.95	

RADAR DETECTORS

BEL (BLT)

826 Micro radar detector .....Dm	$109.95	59.95
936W 3-band wideband Ka detector	249.95	179.95
956W 3-band wideband Ka detector	299.95	219.95
956W-R 3-band wide Ka remote detector	339.95	249.95
966STW 3-band wideband Ka detector	459.95	299.95
966STW-R 3-band wide Ka remote detector ..	489.95	329.95
966W 3-band wideband Ka detector	379.95	269.95
LA-132 Laser detector		99.95

COBRA (COB)

RD-2110 Super heterodyne radar detector ..D	$ 84.95	59.95
RD-3120 Super heterodyne radar detector ..D	99.95	69.95
RD-3160 Small superhet detector .....Dmf	219.95	99.95
RD-3168 Small superhet detector .....Dmwf	249.95	109.95
RD-3170 Deluxe superhet detector .....Dmf	299.95	139.95
RD-4120 Super heterodyne detector .....Dmwf	209.95	99.95
RD-6000 Solar powered radar detector .....D	319.95	199.95
LD-200 Laser detector	129.95	99.95
RD-300 3-band narrow band detector	139.95	109.95
RD-3163 3-band radar detector	159.95	99.95
RD-3183 3-band radar detector	189.95	119.95

LAND MOBILE

COURIER (COU)

Procom* 2w VHF FM hand-held/batt/cgr	$199.95	139.95
ANT-2 Extra BNC flexible antenna	12.00	9.95
AUC-12 Cig lighter charger adapter	12.00	9.95
CAT-12 Leather carrying case	22.50	19.95
CHB-7 Extra AC battery charger	6.50	5.95
RB-7 Extra nicad battery pack	32.00	29.95
RSM-1 Speaker/mic	37.50	32.95
*Available in one of three frequencies:		
Frequency **A** (red) - 151.625 MHz (itinerant)		
Frequency **B** (blue) - 154.570 MHz		
Frequency **C** (green) - 154.600 MHz		
M-54 5w 4ch VHF FM hand-held/batt/cgr/151.625	299.95	199.95
U-22* 2w 2ch UHF FM hand-held/batt/cgr	279.95	189.95
*Available in one of five frequencies:		
Frequency **A** (white) - 462.575 MHz		
Frequency **B** (black) - 462.625 MHz		
Frequency **C** (orange) - 462.675 MHz (REACT)		
Frequency **D** (brown) - 464.500 MHz (business radio svc)		
Frequency **E** (yellow) - 464.550 MHz (business radio svc)		

ICOM (ICO)

IC-H2 2 ch 5w 150-158 MHz diode HT .....Dm	$449.00	269.95
IC-H6 6 ch 5w 154.215-159.21 diode HT .Dm	466.00	279.95
IC-H10 10 ch VHF prog HT w/CM-23 batt Δm	619.00	299.95
IC-H18 16 ch 5w 148-165 MHz prog HT ...Dm	819.00	499.95
IC-U2 2 ch 2.5w 450-490 MHz prog HT ....Dm	649.00	389.95
IC-U12 12 ch 2.5w 450-460 MHz diode HT .Dm	499.00	299.95
IC-U12/tone 12ch 2.5w 450-460 diode/tone Dm	583.00	349.95
IC-U18 16ch 5w UHF HT; 450-460 or 460-470 ..Dm	849.00	499.95
BM-70 Desk charger; H-18/U-18 .....Δm	139.00	89.95
TC-2 CTCSS encoder/decoder; U-12/TTP Dmw	96.50	69.95
TC-3 CTCSS encoder/decoder; U-12 .....Dm	96.50	69.95
UT-14 Tone unit .....Dm	115.00	79.95
IC-H16 16 ch 3w VHF keyboard HT	729.00	549.95
IC-U16 16 ch 2.5w UHF keyboard HT	749.00	569.95
IC-125 5 ch 25w VHF diode mobile .....Dm	611.00	399.95
IC-V200 12 ch 25w 148-160 prog mobile Dm	700.00	399.95
IC-U200 2 ch 25w UHF prog mobile .....Dm	700.00	399.95
IC-V100 16 ch 50w VHF keyboard mobile	855.00	649.95
IC-U400 16 ch 35w UHF keyboard mobile	866.00	649.95

ICOM - continued

	Reg	Sale
UT-26 2-tone decoder; V-100/U-400 .....Δm	53.00	39.95
UT-10 CTCSS unit for IC-435 .....Dm	95.00	59.95
Programming extra on all Icom Land Mobile		
A-2 5w PEP synthesized aircraft handheld ..†	575.00	449.95
A-20 5w PEP synth air handheld w/VOR ....Δm	639.00	499.95
A-21 5w PEP Navicom Plus aircraft handheld †	680.00	529.95
Call Paul S. at Milwaukee for Icom Land Mobile		

MAXON (MAX)

MX-49EA 49 MHz headset Xcvr/ear mic ...Dmw	$ 69.95	24.95
MX-49H 49 MHz FM handheld Xcvr .....Dmwf	39.95	19.95
MX-49HQ 49 MHz motorcycle headset Xcvr .Dmw	59.95	24.95
MX-49SA 49 MHz FM headset Xcvr .....Dm	49.95	24.95
MX-49FX 5 ch 49 MHz headset Xcvr		59.95
MX-49HD 5 ch 49 MHz handheld Xcvr	59.95	34.95
MX-49HX 5 ch 49 MHz euro-design headset Xcvr	89.95	49.95
MX-49SX* 49 MHz euro-design headset Xcvr	59.95	29.95
*Available in channels **A**, **B**, **C**, **D** & **E**		

RANGER (RAN)

RCI-1000* 1w mini VHF FM hand-held/batt/cgr .	$189.95	129.95
BT-10 Extra nicad batteries	29.95	24.95
DG-10 Desk charging stand (use wall cgr) .	14.95	
LC-1000 Leather case	24.95	19.95
MT-17 CTCSS encoder/decoder	54.95	49.95
SRA-106A Speaker/mic	44.95	39.95
*Available in one of three frequencies:		
Frequency **A** (red) - 151.625 MHz (itinerant)		
Frequency **B** (blue) - 154.570 MHz		
Frequency **C** (green) - 154.600 MHz		

MARINE VHF FM RADIO

ICOM (ICO)

M-2 5w synthesized marine hand-held	$630.00	369.95
M-5 5w synth hand-held w/9 memories	693.00	399.95
M-11 6w synth splash resistant hand-held ...	659.00	399.95
CA-1 Extra flexible antenna	18.75	
CM-60A/BC-60A 6 pos gang cgr; std batts	567.00	429.95
LC-M12/5 Leather case; M-2/5 w/BP-3 ....D	62.95	
RB-1 Vinyl waterproof radio bag	37.75	
M-56 25w synth mobile marine Xcvr	609.00	369.95
M-800* 150w fiber optic scanning SSB marine Xcvr	3245.00	2348
*Special order		

MOTOROLA (MOT)

H5057R 25w basic VHF marine Xcvr	$379.00	229.95
H5058R 25w dlx VHF marine Xcvr	549.00	329.95
H5059R 25w VHF marine Xcvr w/scrambler*	869.00	499.95
*Requires munitions license to export		
HSN9690 Hailer speaker for H5058R/5059R ..	40.00	39.95
H5111 5w VHF marine hand-held	639.00	399.95

RANGER (RAN)

RCI-8500 25w 90 ch VHF marine Xcvr	$399.95	189.95
RCI-7000 5w 88 ch VHF marine hand-held ...	339.95	159.95
RCI-9000 5w 90 ch VHF marine hand-held ...	429.95	199.95

UNIDEN (UNI)

MC-615 25w 64 ch VHF marine Xcvr	$269.99	149.95
MC-625 25w 60 ch VHF marine Xcvr	299.99	149.95
MC-790 25w 90 ch VHF marine Xcvr	379.99	199.95
HH-978XL 5w 90 ch VHF marine hand-held ...	349.99	189.95

LARSEN (LAR)

PO-150-SBK 4' 3 db mast mounted ant	$ 53.80	

SHAKESPEARE (SHA)

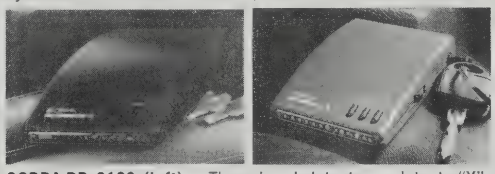
399-1 6 db, 9' 6" 2-piece ant, less mount	$177.95	84.95
209 Swivel mount & upper bracket .....Dmw	64.50	29.95
497 6 db, 8' antenna, less mount	79.95	39.95
5202 6 db ant w/chrome ferrule, less mt	120.50	59.95
5206-C Economy 8' ant w/chrome ferrule, no mt .	54.50	29.95
366H Chrome zamac ratchet mount	58.50	29.95
495 White plastic lift & lay mount	23.95	14.95
420 3 db, 5' ant w/fold-down mount	87.50	44.95
420-M-2 3 db, 5' mast mount antenna	107.50	54.95
5204-8 Combo CB/VHF marine 8' antenna	174.95	84.95
390 23' 2-piece SSB antenna, less mt .....T	167.95	79.95
210 Swivel mt & upper bkt for 390 .....Dmw	65.50	24.95

COBRA®

Trapshooter® Radar Detectors

COBRA RD-2110 (left) • Responds to "X" and "K" band radar, has extended) "K" band range. Dual Alarms – audio and visual; Visor or Dash Mountable; Power On/Off Control; Tone Alarm; Automatic system Test; Alarm Signal Indicator; Highway/City Switch. 2¾"w x ¼"- ¾"h x 3⅞"d, 7 oz..... **$59.95**

COBRA RD-3120 (right) • "X" and "K" band detector. Extended "K" band range. Audio and visual; Visor or Dash Mount; Power On/Off Control; Tone Alarm; Auto system Test; LED Signal Strength Indicators; Alarm Signal Indicator; "Dim" Switch; Test/Mute Button; Highway/City Switch; Two Anti-false Systems. 2¾"w x ¼"- ¾"h x 3⅞"d, 7 oz **$69.95**

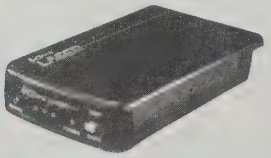


COBRA RD-3163 (left) • Three band detector – detects "X", "K", and Hi-Band "Ka" (Stalker) radar. Separate "X", "K", and "Ka" LED indicators; Dual Horn Antennas; Separate Alarm Tones for each Band. 3¼"w x ¾"h x 4¾"d, 8½ oz..... **$99.95**

COBRA RD-3183 (right) • 3 Band Detector. Separate "X", "K", and "Ka" Band Indicators; 3-Position Dim Switch; Test/Mute Button; Power LED; LED Signal Strength Meter; Highway/City Switch; City LED; ON/OFF/Volume Control; Alarm Signal Indicator; Windshield, Visor or Dash Mount **$119.95**

COBRA RD-6000 SOLAR STEALTH • Solar Powered "X" and "K" band Detector. Continuous charging of batteries in daylight make it possible to operate at night and for up to thirty hours, without a power cord. Automatic Power Shut-Off for Extended Operating Hours. Separate alarm tone and indicators; LED signal strength indicators; City/Highway switch; auto mute/dim circuit; power On/Off volume control ... **$199.95**

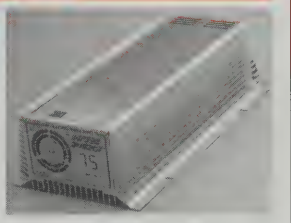
Cobra Laser Detector



COBRA LD-200 LASER Detector • System detects new Laser Speed Technology. Attaches to any conventional radar detector or may be used alone. Has 1½ mile detection range and features both visual and audible alarms. Comes with a universal mounting kit featuring 3 custom power cords and 9/12 volt power switch for complete compatibility.....**$99.95**

TPS

Power Source™ 12 Volt Power Supplies

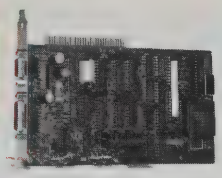


• 90-130 VAC input with 12 VDC Output • Filtered & Regulated • Lightweight • Less Heat • Forced Air Cooling • Over temperature Protection • MOV Protected • Use as Battery Charger

4 Models: 15, 30, 45 or 75 Amp output rating

See TPS in the Price List

HamPute™ Inc.



DSP Board for IBM PC/XT/AT & Compatibles

HamPuter™ PC-1 • Half length plug-in DSP card for IBM. PC/XT/AT & Compatibles. Analog Devices 2105 DSP chip provides SSB/CW filtering, CW memory keyer, microphone audio shaping, automatic notch filter, and signal enhancement for any rig. Built-in computer control adapter for ICOM/Kenwood/Yaesu/Ten-Tec. Universal architecture with two 6 KHz audio I/O channels and 5-watt speaker output. Comes complete with cable, manual, and basic software. DSP programs download from PC disk..... **$229.95**

Amateur Radio Engineering

Voice Synthesized Frequency Counter

ARE-20 Digitalker • A voice synthesized frequency counter that allows visually impaired amateurs to determine on what frequency their VHF or UHF handheld radio is transmitting. It announces the transmit frequency by voice. It works without a direct connection – simply place the DigiTalker adjacent to the radio and transmit to get it to announce the frequency. Has external antenna jack for longer range. 5¼" x 4" x ½" Uses 9V battery.....**$229.95**

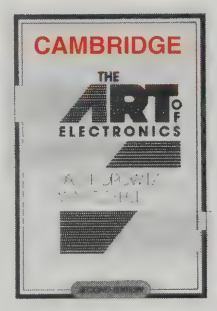
PERIPHEX

Power Packs for longer QSOs. These Super Packs feature short circuit protection and overcharge protection, and a 12 month warranty. Four models available for late model **ICOM** handhelds.

BP-7S • 13.2V @ 1200mah .. **$65.00**
BP-8S • 8.4V @ 1200mah **65.00**
BP-84S • 7.2V @ 1400mah ... **63.00**
BP-85S • 12V @ 800mah **76.00**

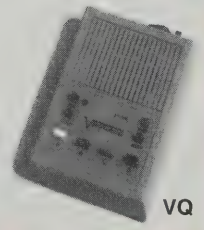
See Price List for other Models.

The ART of Electronics



A single authoritative text and reference on electronic analog and digital circuit design. Emphasizes methods actually used by circuit designers–a combination of some basis laws, rules of thumb, and a large bag of tricks. The largely nonmathematical treatment encourages circuit intuition, brain storming, & simplified calculations of circuit values & performance. 7" x 10" 1120 pages..... **$49.50**

j • Com



VQ

The Ventriloquist Voice Keyer

Transmit two letters over and over, or save yourself repeating contest CQs. The Ventriloquist audio memory holds 4 variable length messages for a total of 20 seconds of audio storage; each message can be played by pressing one of the message key. Remote interface can be used to trigger speech output from alarm systems, motion detectors, etc. 10 pin connector at the rear of the unit. Separate 5-pin plugs may be used for transceiver/computer interfaces. Built-in computer interface via computer's printer port is compatible with the CT contest logging program, use a simple BASIC or C program (included). Can be used to add speech output to any computer application. **Note:** Computer for normal voice keyer operation. Built-in speaker, 4" x 5" x 1" (See Price List for Options) .. **$149.95**

Bel Merit Multimeters

$39.95

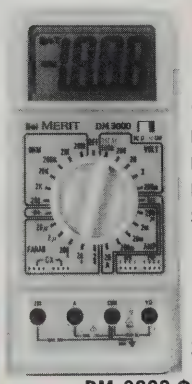
DM-90 • Pencil-Type MaxiTester Digital Multimeter/Logic Tester

• 3-1/2 digit LCD display • Annunciators • Automatic and manual range selection • Automatic polarity selection • Data hold • AC/DC Volts: 500 Volts maximum • Resistance: up to 20M Ω • AC/DC current measurement: 200mA maximum • Logic test function • All ranges protection • Buzzer continuity check • Diode test • 6½" x 3¾" x 1¼ ", 70g • w/test and logic leads, batteries & case.

$19.95

DM-10S • EasyTester Digital Multimeter

• 3-1/2 digit LCD display • automatic polarity • 17 ranges • Manual range selection • AC volts: 750V maximum • DC volts: 1000V maximum. • Resistance: up to 2000K Ω • DC Current: to 200mA • Diode & battery test • 4.56" x 2.76" x 0.94", 5 oz • w/test lead, battery & case.



DM-3000 & DM-3050 Wide Range Digital Multimeters

• Big, 2½"w x 1¼"h, 3½ digit LCD readout • **(DM3000)** 8 function/24 ranges, **(DM3050)** 10 function/27 ranges • 10M Ω input • Manual selection • AC: 750V • DC: 1000V • Ω to 20M • DC Current: to 20A • Capacitance to 20uF • Diode test • Continuity beeper **(DM3050)** • Frequency test to 200kHz **(DM 3050)** • 3½"w x 7½"h x 1½"d, 10½ oz.

DM-3000 $49.95 • DM-3050 $59.95

VANCO *Low Cost* Meters

Model SWR-1 • Combination Field strength and SWR meter for 3.5 to 150MHz.; 52Ω. 6"h x 2"w x 2⅞"d, 14 oz..... **$19.95**

Model SWR-2 • Combination Power, SWR and Field Strength Meter for 1.7-150MHz; 52Ω. 0-10W and 0-100W ranges. Accuracy: SWR ±5%; Power ±10%. 6"h x 2"w x 2"d, 14 oz.. **$29.95**

Model SWR-3 • Economy SWR meter for the 1.7 to 30MHz range. Impedance.: 52Ω; Sensitivity: 200uA; SO-239 connectors; Accuracy: ±5%. Mini size – 2½" x 3½" x 3" **$14.95**

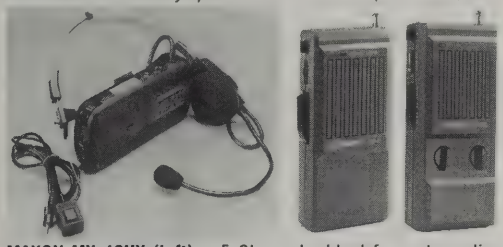
maxon SYSTEMS INCORPORATED
49 MHz Personal Communicators

Low Power • 1/4 mile average range • No license required

Dual conversion superhet receiver provides crisp, clear voice transmission. All units are compatible - two or more can be used for group communications. Voice activated (VOX) lets you transmit when you talk, or use the bypass switch for push-to-talk (PTT). Volume and mic sensitivity controls prevent outside noise from triggering the VOX.

MAXON MX-49SX (left) • Single-channel, features a lightweight adjustable headset with retractable whip antenna. indicator, boom microphone with windscreen and battery charger jack. 9V battery *optional*. 5" x 2½" x 1", 9 oz..... **$29.95**

MAXON MX-49F5 (right) • 5 channels, features a unique earphone/mic that picks up voice vibrations from the ear canal for transmit and provide receive audio. Along with the built-in antenna it will not get in the way of helmets. Includes remote PTT button. 9V battery *optional*. 5¼" x 2¾" x 1", 7½ oz. .. **$39.95**



MAXON MX-49HX (left) • 5-Channels, Ideal for motorcycling and snowmobiling, etc. Helmet-adaptable headset has a whip antenna and boom microphone with windscreen. VOX operated or PTT with on-unit or remote switch. Front mounted off/on/volume, VOX sensitivity control and click detent channel selector. Jacks for *optional* passenger intercom headset. Uses 3 "AA" batteries–*optional*. 3" x 5½" x 1", 6½ oz **$49.95**

MAXON MX-49H Hand-Held (center) • Single channel, Ideal for business, industry and recreation. Large, easy to use PTT button (No VOX),. single on/off/volume control; Call tone for paging. Telescoping antenna, sturdy belt/pocket clip. 5½" x 2⅝" x 1½", 6 oz. Uses 9V battery–*optional*..... **$19.95**

MAXON MX-49HD Hand-Held (right) • 5 channels, compatible with all other MAXON radios. Variable squelch and volume; dual conversion superhet receiver, call tone button for paging, adjustable volume, telescoping antenna. Uses 4 "AA" batteries–*optional*. 6¼" x 2⅝" x 1½", 6 oz **$34.95**

Receive latest local Weather broadcasts on 162.400, 162.475 or 162.550 MHz - up to 50 miles! Sounds "Severe Weather Alert". when triggered by transmitting station tone. 110V AC, with battery back-up 5¼ x 4½" x 1¼", 12 oz... **$39.95**

MAXON WX-3 Weather Monitor

Low Power VHF Handhelds

Ideal for for short range communications–construction sites, factories, security, etc. Choice of one of three channels

- **151.625 MHz** *(itinerant)*
- **154.570 MHz**
- **154.600 MHz**

RANGER RCI-1000 (right) • Mini-sized, 1 Watt output, 2 channels. Includes a set of crystals installed for one of the frequencies listed above, rechargeable nicad battery and AC charger, flexible antenna. 4⅞"h x 2½"w x ⅞"d, 12 oz **$129.95**

COURIER PROCOM (left) • 2 Watts output. Includes one set of crystals installed for one of the frequencies listed above, rechargeable nicad battery and AC charger, flexible antenna. 7"h x 2½"w x 1¼"d 16 oz. **$139.95**

ICOM Land Mobile

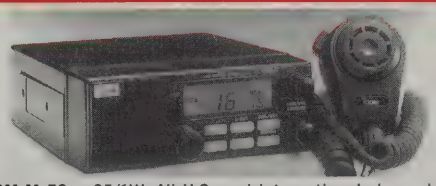
IC-V100 VHF Mobile (left) • 148-174MHz; 50W; 16 Channels with Programmable transmit and receive CTCSS Tones; LCD readout; Fully Synthesized; Scanning, with or without Priority. Requires 13.8V DC @ 12A. 2"h x 6¾"w x 10⅛"d **$649.95**

IC-U400 UHF Mobile • Looks identical to V100 above, and same except. 450-480MHz; 35W; 13.8V DC @ 10A **$649.95**

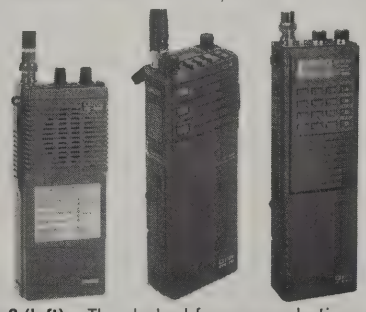
IC-H16 VHF Handheld •148-174MHz; 3 Watts, 5 Watts *optional*; 16 Channels with Programmable transmit and receive CTCSS Tones; LCD readout; Fully Synthesized; Scanning, with or without Priority; DTMF. Battery pack, flexible antenna and belt clip. 8"h x 2¾"w x 1½"d, 1.3 lbs..... **$549.95**

IC-U16 UHF Handheld • Looks identical to the H-16 (left), and same except. 450-490MHz; 2.5W, 5W *optional*..... **$569.95**

ICOM Marine Radio



ICOM M-56 • 25/1W. All U.S. and International channels, 10 Weather channels. 20 memories, scanning with lockout. Dual watch simultaneously monitors channel 16 and one other. Instant channel 16. 5½ x 2¼" x 6⅛"d, 2.4 lbs **$369.95**



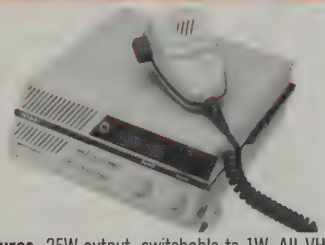
ICOM M-2 (left) • Thumbwheel frequency selection of 78 U.S. and International channels, 4 weather channels, and 4 aux. priority channels. 5W. 6"h x 2½"w x 13¼ "d, 1½ lbs..... **$369.95**

ICOM M-5 (right) • Keyboard entry and control of all U.S.and International marine channels and 10 weather channels. Scanning; 10 memories; Dual watch; Instant Channel 16; 5 Watts output. May be connected directly to 12V DC to extend operation. 2¼"w x 2⅝ x 1¼ "d, 1.3 lbs..... **$399.95**

ICOM M-11 (center) • 6 Watts, frequency synthesized with 78 channel capacity. 8¼ "h 2⅝ "w x 1⅜"d..... **$399.95**

Motorola Marine Radio

TRITON Series



Basic TRITON II features: 25W output, switchable to 1W; All VHF Marine Channels - US, International & Canadian + All Weather Channels; Instant Channel 16 and Weather; Reversible tilt-face Front Control Panel and Microphone; Rotary Channel Selector; LCD Display; Mounting Bracket and Hardware **H5057R $229.95**

TRITON II+ and (IIC) • Additions: built-in Loudhailer capability, programmable channel scan, programmable channel bank, dual watch **H5058R $329.95**

TRITON IIC • Additions: built-in analog voice scrambler*, up to 300 different user programmable codes.*Scrambler requires Munitions License to export... **H5059R $499.95**

RANGER Marine Radio

RANGER RCI-8500 (left) • 25 or 1W frequency synthesized with 90 U.S. and International channels and 10 Weather channels. Direct channel 16 access; channel up/down control from microphone; dual watch; scanning; back lit display; weather resistant **$189.95**

RANGER RCI-7000 (middle) • 5W Handheld Marine Transceiver. Frequency synthesized. Rotary knob selection with digital indicator of all U.S. and International channels, and 8 weather channels. 7¼"h x 2½"w x 1½"d **$159.95**

RANGER RCI-9000 (right) • 5W Handheld Marine Transceiver. Frequency synthesized. Keyboard entry and control.with LCD readout of all U.S. and International marine channels, and 10 weather channels. 7¼"h x 2½"w x 1½"d **$199.95**

Shakespeare Marine Antennas

5202 (A) • Collinear-phased 5/8-wave elements. 6dB gain. 8 ft. long, handles 50W. DC grounded. Chrome-plated brass ferrule. 20 ft. coax cable with connector..... **$59.95**

497 (B) • Collinear phase 5/8-wave elements. 6 db gain. 8 ft. long, handles 50W - *not* DC grounded. Smaller diameter absorbs flex. 20 coaxial cable with connector **$39.95**

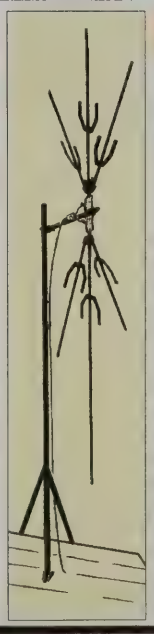
5206-C (C) Economy model. End fed, 8 ft. long, 6dB gain. Handles 50W, DC grounded. 15 ft. coax cable w/ connector **$29.95**

420 (D) • Center-fed 1/2-wave coaxial sleeve model. 3dB gain, 5 ft. long. Polycarbonate lift and lay deck mount with leveling plate, hardware & 20 ft coax cable w/ connector .**$44.95**

495 (E) • Lift and lay polycarbonate deck mount..... **$14.95**

366-H (F) • Rachet mount with handle for deck or bulkhead mounting. Has 9/32" hole for Loran cable. Standard 1"-14 male threads. Chrome plated zamac..... **$29.95**

Channel Master
Monitenna 4-Band Scanner Antenna



Most scanning radio come equipped with small telescoping antennas and are capable of receiving only local signals within a 5-10 mile range. With an external antenna such as the Monitennna, it is possible to greatly increase that range, many times, depending on terrain, etc.

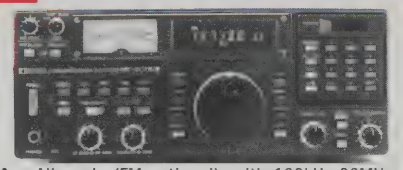
The Monitenna features separate pretuned receiving dipoles for efficient reception of the **30-50**, **148-174**, **450-470**, **470-512** and **800-912 MHz** bands.

Constructed of high-strength aluminum, and completely weather protected. Comes with 50 ft. length of coaxial cable and Motorola-type plug.... **Model 5094A $39.95**

Model 5095A • Includes everything for roof-top installation: Monitenna, 50 ft. coaxial cable with plug, 5 ft. tri-mast mount, 2 ft. extension standout, double headed nails, and sealing washers ..**$49.95**

ICOM SHORTWAVE Radio

Sale Price $989.95



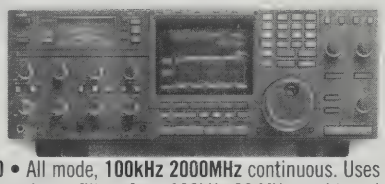
ICOM R-71A • All mode (FM optional), with 100kHz-30MHz general coverage. Dual VFO's and direct keyboard entry, 32 tunable mode and frequency memories. RIT, notch, selectable AGC, noise blanker, tone, squelch, recording jack. Selectivity: 500 Hz, 2.3 kHz, 6 kHz, 15 kHz. *Optional* wireless remote controller and voice readout units. Built-in 110/220V AC, optional kit for 12V DC operation. 11⅛"w x 4⅛"h x 10⅞"d, 16½ lbs.

ICOM R-7000 Scanning Receiver • Similar to R-71A but covers 25-2000MHz. FM, scan, 99 memories, more! **$1198**

Sale Price $1228

ICOM R-7100 • All mode UHF receiver with coverage from 25 to 2000MHz. Dial and keyboard entry, 900 numbered memory channels. Multiple scan capabilities with new window scan, clock/timer, optional TV receive capability.

Sale Price $4898

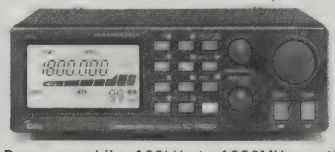


ICOM R-9000 • All mode, **100kHz 2000MHz** continuous. Uses 11 separate bandpass filters from 100kHz-30 MHz, and tuned bandpass filters with low noise GaAs FET's for VHF and higher. Manual tune or keyboard entry, 1000 multi-function memories and 8 scan modes. Multi-function 5" CRT displays frequencies, modes, memory contents, operator entered notes, and functions. Spectrum scope allows observation of adjacent receive frequencies. Terminal monitor function for monitoring of RTTY or Packet information from terminal or TNC. IF shift, notch, noise blanker. 16½"w x 5⅞"h x 14½"d, 44 lbs.

Sale Price 929.95

ICOM R-72 • 30kHz-30MHz coverage, SSB/CW/AM, FM *opt.* 101 memories: 99 store frequency/mode, 2 store independent scan edge channels. Programmed scan, selected memory scan, memory scan and auto memory write scan. RF attenuator and preampr, noise blanker, ICOM's DDS and CI-V systems, and clock/timer function. 9½"w x 3¾"h x 9"d, 11 lbs.

Sale Price $599.95



ICOM R-100 • Base or mobile, 100kHz to 1856MHz continuous; FM, wide FM and AM. Keyboard or manual tuning, selectable tuning steps and scan. 121 memories: 100 for frequency/mode, attenuator and preamp settings; 20 scan edge for 10 pairs of ranges for programmed scan; 1 priority. 24-hour clock/timer, 3 antenna inputs. Telescoping antenna and mobile mount included. 13.8V DC @ 1A, *optional* AC adaptor.

$449.95 **ICOM R-1** • Mini-handheld SW receiver. Covers 100kHz-1300MHz; FM/wide-FM and AM modes, 100 memory channels. Programmed, memory, selected mode memory, and auto memory write scanning. Rotary tuning or direct keyboard entry, LCD display, 24-hour clock/timer, adjustable LCD contrast, signal indicator. Power-saver function. Built-in NiCd batteries; *opt.* batteries or 6-16V ext. DC. 1⅞"w x 4"h x 1½"d.

See Price List for ICOM Accessories

KENWOOD

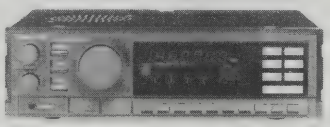
Sale Price $649.95

KENWOOD R-2000 • Covers 150 KHz to 30 MHz and 108 to 174MHz with *optional* VHF converter unit. SSB/CW/AM/FM modes. Dual digital VFOs, 10 memories store frequency, band, and mode data. Scanning. Digital display with 100Hz resolution, three built-in IF filters, optional CW filter. S-meter noise blanker, attenuator, squelch, tone. Dual 24-hour clocks with timer, record and phone jacks muting terminals. 110/220 VAC, 12 VDC *optional*. 14⅛"h x 4½"h x 8"d, 12 lbs.

Sale Price $879.95

KENWOOD R-5000 • Covers 100 KHz to 30MHz and 108 to 174MHz with *optional* VHF converter unit. SSB/CW/AM/FM modes. Dual VFOs, direct keyboard frequency entry. 100 memories store mode, frequency and antenna selection. Scanning, dual noise blankers, selectable AGC, attenuator, dual 24-hour clocks and timer. Muting, record and headphone jacks. *Optional* filters, voice readout and computer control. 110V AC with 12V DC *optional*. 10½"w x 3¾"h x 10½"d, 12 lbs.

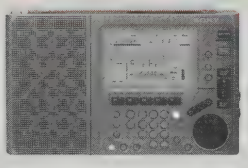
Sale Price $499.95

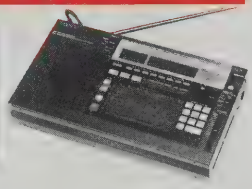


KENWOOD RZ-1 • Base or mobile 500kHz-905MHz wide-band scanning receiver. FM/wide-FM and AM modes; also tunes FM stereo broadcast with outputs to drive an external amplifier. Automatic mode selection function, 100 memories with message and band marker. Direct keyboard or VFO frequency entry with four types of scanning Built-in speaker front mounted phone jack, switchable AGC, squelch, illuminated keys. 12VDC. 7¾"w x 1⅞"h x 6"d, 3.31 lbs.

See Price List for KENWOOD Prices & Accessories

SONY

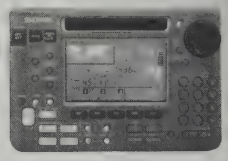




SONY ICF-2010 (right) • Covers 150KHz-30MHz, 76-108MHz and 116-136MHz MHz; AM/FM/SSB/CW. Tunes manually or by keyboard entry, automatic scan, memory scan or 32 memory presets. LCD display, switchable IF bandwidth, fine tune. 12/24-hour clock with alarm, programmable timer, and sleep timer. Telescoping and built-in ferrite bar antennas, 4" speaker. Record, earphone, external antenna and DC jacks. Operates from 3 "D" and 2 "AA" batteries, 12V DC, or optional 110V AC adapter. 6½"h x 11⅜"w x 2⅛"d, 3¾ lbs **$349.95**

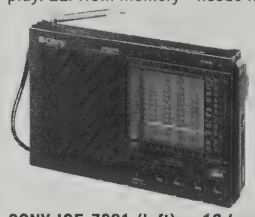
SONY ICF-SW77 (left) • Same coverage and features of the ICF-2010, but more – it's a step-up! Stores up to 100 stations (162 frequencies), allows stations to be selected by name and is capable of storing broadcast schedules. Programmable six character Station Name Display, 50 Hz tuning resolution, FM stereo with headphones.....**$499.95**

SONY ICF-SW800 • 2 bands 3700-17.9MHz, SW/FM. Card Tuning System; 3 cards for 60 pre-programmed station presets, also user programmable. 10-key direct access tuning, PLL quartz synthesis tuning, dual conversion circuitry. Clock and timer function. Supplied with 4 cards (3 for presets, 1 for clock setting). **$129.95**



SONY ICF-SW7600 (left) • 153kHz 29.995MHz + 76-108MHz AM/SSB/CW/FM, *FM Stereo* with headphones. 10-key direct access, memory scan or 10 memory tuning. LCD, 12/24 hour clock/timer. Telescoping and ferrite bar antennas, and external. wire antenna in reel-in case. Record, earphone, ext. ant. and power jacks. Requires 4 "AA" batteries or use included 110V AC adapter. 4¾" x 7⅜"w x 1⅜"d, 1½ lbs. **$219.95**

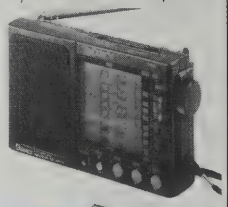
SONY ICF-SW55 (right) • Similar to ICF-7600, but improved. Step scan tuning, 100 memories, programmable station display. EEPROM memory - needs no back-up battery **$369.95**

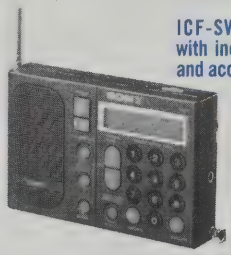


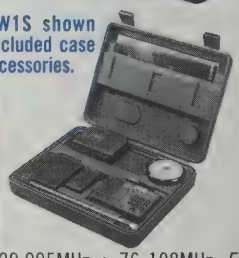
SONY ICF-7601 (left) • ***12 bands*** - AM/FM broadcast and 10 shortwave bands. LED tuning indicator, wide bandspread, music or news tone switch, 3½" speaker, earphone jack. Telescoping and built-in ferrite bar antennas. Requires 4 "AA batteries. 7⅝" x 4⅞" x 1 1/16", 1 lb, 5 oz..... **$119.95**

SONY ICF-7700 (right) • ***15 Bands*** - LW, AM/FM broadcast and 12 SW bands. Large analog-style LCD and illuminated digital readout, 15 memories. Clock sleep timer and alarm radio/buzzer, 3" speaker, earphone/record out jack. Requires 4 "AA" batteries. 7⅝" x 4⅞" x 1 1/16", 1 lb, 5 oz..... **$169.95**

SONY ICF-SW20 • ***9 bands*** - MW, FM and 7 SW bands. Soft touch band selectors, shortwave bandspread, 2½" speaker, earphone jack. Telescoping and built-in ferrite bar antennas. Requires 2 "AA" batteries. 4⅜" x 2¾" x 1",9½ oz **$99.95**

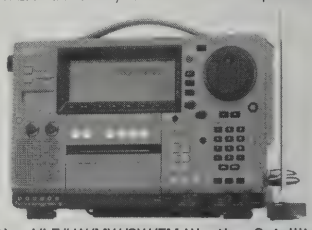






ICF-SW1S shown with included case and accessories.

SONY ICF-SW1S • 150kHz-29.995MHz + 76-108MHz. *FM Stereo* with earphones. 10-key direct access, 10 memory presets,. auto and manual scan tuning. LCD, clock w/alarm, 3" speaker. Travel case, external wire antenna in reel-in case and telescoping whip antenna with antenna booster/controller, AC adapter, and dynamic stereo earphones. Requires 2 "AA" batteries. 4¾"w x 2⅞ "d x 15/16"d, 6½ oz **$299.95**



SONY CRF-V21 (right) • VLF/LW/MW/SW/FM Weather Satellite Visual Band Receiver. Displays, records, and prints out weather charts, photos and hard copy of LCD display. Tuning modes: spectrum analyzed, analog, 10-key direct access or 350 memory presets with name labeling. Three-way scan, clock/8-event programmable timer. AC adapter, rechargeable battery/charger, active telescopic antenna, dust cover, printer paper, RS-232 cable. 11¾"h x 16¼"w x 6¾"d, 21 lbs... **$4369**

SONY PRO-80 (left) • Hand-sized. 150kHz-108MHz continious full coverage SW/LW/MW/FM/TV + 108.15-216MHz with supplied converter-adds AIR/PSB/TV (high). 10-key direct access, 40 memories. Multiple tuning/scan functions, LCD readout Requires 2 "AA" batteries. 3½"w x 6¼"h x 2 1/16"d, 1½ lbs**$369.95**

See Price List and other SONY Display Pages for more Products & Accessories

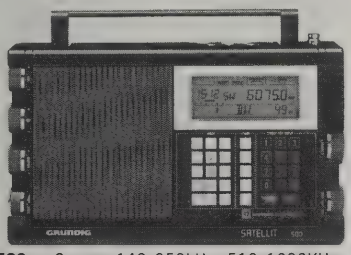
SHORTWAVE Radio - cont.

GRUNDIG

GRUNDIG TOLL FREE Product Info Line:
1-800-872-2288

Sale Price
$619.95

GRUNDIG Satellit 700 • Covers 1.6-30MHz includes AM, FM and LW bands with 512 standard memory positions. FM stereo with headphones or external speakers (not included).. Direct frequency entry via backlit keypad, SSB and synchronous detectors, wide/narrow filters. Dual clocks and turn-on timers, sleep timer, eight character memory bank labeling with 2,048 memories possible. LCD multi-function display, Built-in telescoping, ferrite antenna and external antenna connector, Operates from 110/220/240V AC, 4 "D" alkalines or nicads (not included), built-in nicad charger. 12"w x 7"h x 2¾"d, 4 lbs.



Sale Price
$399.95
Limited Time

GRUNDIG Satellit 500 • Covers 148-353kHz, 510-1620KHz, 1.6-30MHz and 87.5-108MHz (*FM Stereo with headset).* Direct keypad or manual. Multi-function LCD display, 42 channel alphanumeric memory. Automatic station search, scanning and last station memory. BFO for CW/SSB. Built-in charger for nicad batteries (not included). Clock/timer. telescoping and ferrite antennas, ext. antenna connector. Operates from AC, 4 "D" batteries, or external 12-16V DC. 7"h x 12"w x 3"d, 4 lbs.

Sale Price
$99.95

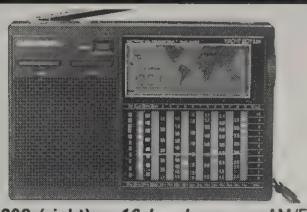
GRUNDIG ***Traveller II • 7 bands;*** covers AM/FM broadcast the 19, 25, 31, 41, 49M shortwave bands and 5.8-15.6MHz. Multi-function LCD display, pushbutton and slide controls, tuning indicator. World time selection switch - select a city and read the time.! Clock with travel alarm. Requires 3 "AA" batteries (not included). Telescoping and built-in ferrite antennas. Built-in 2" speaker, jacks for *included* earphones and ext. AC adapter (not included). 5½"w x 3½"h x 1¼"d.

Japan Radio Co, Ltd (JRC)

JRC NRD-535D• All-mode (AM, SSB, CW, RTTY, FAX and NBFM). covers. 100kHz-30MHz. Keypad entry, DDS-based frequency synthesizer, synchronous detector with selectable side bands for enhanced AM reception. Four fixed filters plus variable bandwidth control, 100 memory channels, computer interface, electronically tuned front end, scanning, dual noise blanker, squelch, clock timer. 120/240V AC; 12V DC @ 2.2 A. 13"w x 5"h x 11"d, 20 lbs **$1798**

See Price List for other JRC Prices & Accessories

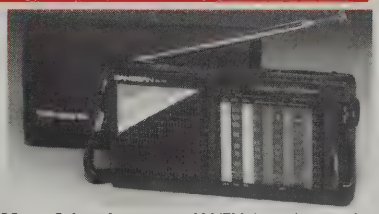
Closeout
$179.95



GRUNDIG ***Yacht Boy* 230 (right)** • ***13 bands;*** covers AM/FM broadcast plus 2.3-26.1MHz. LCD multi-function display with a world map and time zone scanning, covering 42 major cities around the world. Dual function alarm clock with snooze sleep and alarm off. Both telescoping and built-in ferrite antennas, headphone jack, convenient carrying strap.

SANGEAN

Closeout
$59.95

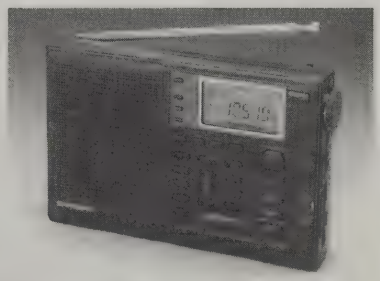


SANGEAN SG-796 • ***9 bands;*** covers AM/FM broadcast, the 16, 19, 25, 31, 41 and 49M shortwave bands plus 2.3-5.3MHz. Has main and 6 sub-shortwave band indicators, accurate LED tuning light, 2" speaker, headphone and external 3V DC power jacks, telescoping antenna and carrying case. Requires 2 "AA" batteries (*not included*). 6"w x 3"h x 1"d.

Sale Price
$189.95

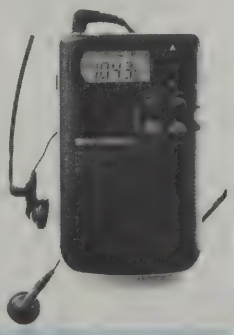
SANGEAN ATS-803A • ***15 bands;*** covers 150kHz-281kHz, AM/FM broadcast (*FM Stereo* with headphones), and the 11, 13, 16, 19, 25, 31, 41, 49, 60, 75, 90 and 120M shortwave bands. Keypad or manual tuning with auto scan and 9 memories. LCD display, BFO for CW/SSB reception. Built-in 4" speaker and telescoping antenna. External antenna adapter, shoulder strap, AC converter, stereo headphones and shortwave handbook. Requires six "D" and two "AA" batteries (*not included*). 11½"w x 6½"h x 2⅜"d, 3¾ lbs.

Sale Price
$189.95



SANGEAN ATS-808 • ***16 bands;*** Covers 150kHz-30MHz, AM/FM broadcast (*FM stereo* with headphones), and the 11, 13, 16, 19, 21, 25, 31, 41, 49, 60, 75, 90 and 120M shortwave bands. Five tuning methods: Keypad, manual knob or up/down tuning, auto-scan and 45 memory presets. Built-in 3" speaker, telescoping antenna. Protective pouch, stereo headphones and external antenna adapter. Requires six "AA" batteries (*not included).* 4½"h x 7¾"w x 1½ " d, 1½ lbs.

SANGEAN DT-200V • AM/FM Broadcast & TV band receiver

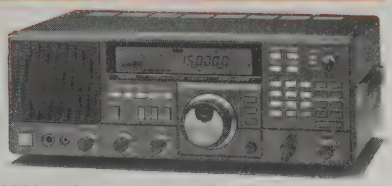


Compact, fits in shirt pocket or clips to belt. Covers AM/FM broadcast (*FM Stereo* with headphones) plus the audio portion of TV channels 2 to 13. LCD display, pushbutton up/down tuning, auto-scan and 19 memory presets. Built-in speaker, belt clip, stereo headphones. Requires 2 "AA batteries (*not included*). 4⅜" x 2⅝" x ¾", only 5 oz. **$69.95**

See Price List for other SANGEAN Prices & Accessories

YAESU

Sale Price
$689.95



YAESU FRG-8800 • Covers 150KHz-29.99MHz and 118-173.99MHz with optional VHF converter. Manual tuning and 21-button keyboard for direct entry and programming of 12memories. LCD with 100 Hz resolution, bargraph S/SINPO indicator. Three scanning modes, dual 24-hour clock/timer, computer compatible with optional interface. 110/220V AC or 12V DC with *optional.* cord. 14"w x 6"h x 9"d, 13 lbs.

See Price List for YAESU Prices & Accessories

DRAKE

R-8 Communications Receiver
Covers 100kHz to 30MHz plus 33 to 55 and 108-174MHz with optional converters. Dual VFOs, 100 memories. AM, FM , RTTY, CW, SSB modes; 5 bandwidth filters; GaAsFET RF amps, fluorescent display, dual time-zone clock. Dual noise blanker IF shift, IF notch, S-meter.13½"w x 5 ¼" h x 13"d, 13 lbs **$979.95**

ANTENNA SUPERMARKET

EAVESDROPPER™ Shortwave Antenna (Right) • Utilizes 8 traps which provide reception of all Shortwave Bands, 11 to 90 meters. Includes Zap-Trapper® electronic gas-tube lightning arrestor and 50 ft. of support rope. Overall length is 42 ft. and comes fully assembled. When ordering, specify with 100 ft. of 72Ω twin lead or weatherproofed center connector with SO-239 for coaxial cable. (*coax not supplied)* **$79.95**

SWL SLOPER Shortwave Antenna • An end-fed coil loaded SWL antenna with underslung parallel element, designed to be mounted in a sloping configuration. Covers AM broadcast band, 120 and 90 meters, and all Shortwave Broadcast bands, 75 through 13 meters. Overall length is 67 ft. and comes fully assembled. Includes Zap-Trapper® lightning arrestor, connector with SO-239, and 50 ft. nylon rope ..**$79.95**

MFJ Shortwave Accessories

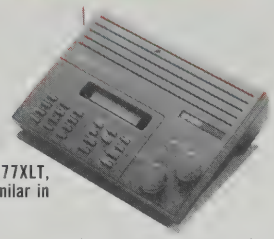
More MFJ - See Index

MFJ-1020A Indoor Active SWL antenna (left) • A tunable/amplified desktop unit with telescoping whip. Tuned circuitry minimizes intermod and provides extra RF selectivity and reduced noise. Also usable as a preselector with an external antenna. Covers 300kHz-30MHz. Requires 9-18VDC or 110V AC w/MFJ-1312 adapter. 5" x 2" x 6" **$79.95**

MFJ-1024 Outdoor Active SWL antenna (right) • Remote unit with 54" whip and 50 ft. coax lead mounts outside - away from noises and for maximum signal. Covers 50kHz-30MHz. Control unit has a 20dB gain amplifier with gain control. A receiver switch selects from 2 radios and an antenna switch selects active or aux antenna. Requires 12V DC or 110V AC with MFJ-1312 adapter. 3"w x 2"h x 4"d **$119.95**

MFJ-959B Receiver Antenna Tuner/Preamplifier (top) Provides proper impedance match for maximum signal transfer from antenna to receiver Covers 1.8 to 30MHz, built-in 20 dB preamplifier with gain control boosts weak station reception. Select from 2 antennas, 2 receivers, Requires 9-18VDC or 110V AC with MFJ-1312 adapter. 9"h x 2"w x 6"d..... **$89.95**

UNIDEN Bearcat

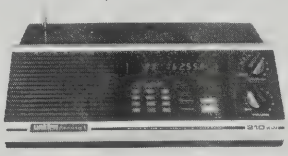


BC-147XLT, 177XLT, 855XLT are similar in appearance.

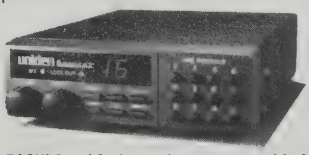
UNIDEN BC-147XLT • 16 channel Base unit covering 10 bands, including weather. Covers 29-29.7, 29.7-50, 50-54,136-144, 144-148, 148-174, 406-420, 420-450, 450-470 and 470-512MHz. Two-digit LED display shows the current channel and scan. Keyboard Entry; Direct Channel Access; Manual Step Tuning; Scan; Lockout; Prioity; Review; Weather Search; Automatic Squelch; Track Tuning; Memory Back-up, Three Scan Speeds. 9"w x 2¾"h x 6½"d, 1.2 lbs **$99.95**

UNIDEN BC-177XLT •16 channel Base unit covering 11 bands, including weather and aircraft. Covers 29-29.7, 29.7-50, 50-54, 118-136, 136-144, 144-148, 148-174, 406-420, 420-450, 450-470 and 470-512MHz. 8-digit back-lighted LCD shows frequency, channel lockout, delay, prioriy, weather search. Keyboard Entry; Direct Channel Access; Manual Step Tuning; Search; Scan; Delay; Lockout; Priority; Auto. Squelch; Track Tuning; Memory Back-up, 2 scan speeds; Weather Search. 9"w x 2¼"h x 6½"d, 1.2 lbs .....CLOSEOUT **$149.95**

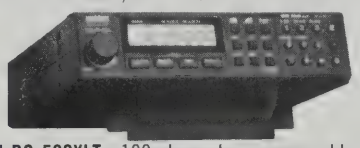
UNIDEN BC-855XLT • 50 programmable channels, 5 banks and 12 bands – including 800MHz, all Public Service Bands, 4 Ham Bands, Federal and Military Land Mobile Bands, and AM. Large LCD displays requencies programmed and being monitored and modes. Scan delay; Track tuning; Automatic Squelch; Lockout, Weather Search; Direct Channel Access; Priority; Programmable Search; Choice of Scan Speed; Memory Back-up. 9"w x 2¼"h x 6½"d, 1.2 lbs..... **$199.95**



UNIDEN BC-210XLT • 40 programmable channels, 2 banks and 11 bands. 29-29.7, 29.7-50,50-54, 118-136, 136-144, 144-148 148-174, 406-420,420-450, 450-470 and 470-512 MHz. Keyboard Entry; Weather Search; Priority; Channel Lockout; Scan Delay; Automatic Search; Vacuum Fluorescent Display; Automatic squelch. 117V AC or 13.8V DC mobile operation with optional DC cord. 10⅜" w x 3½"h x 8"d..... **$149.95**

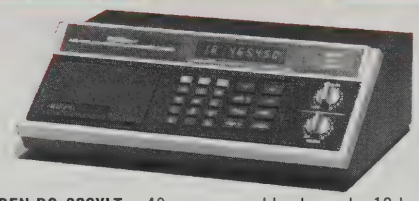


UNIDEN BC-560XLA • 16 channel, programmable Mobile unit. 10 bands: 29.0-29.7, 29.7-50, 50-54, 136-144, 144-148, 148-174, 406-420, 420-450, 450-470 and 470-512MHz. Features: Pushbutton Entry; Two-Digit LED Display; Review Key; Priority; Memory Back-up; Channel Lockout; Direct Channel Access; Weather Search; Built-in Delay; Track Tuning. Requires 13.8V DC, mobile mounting bracket included. 6⅞"w x 1⅝"h x 5½"d, 1¼lbs..... **$119.95**



UNIDEN BC-590XLT• 100 channel, programmable Base or Mobile unit. 5 scanning banks and 11 bands. Covers 29.0-29.7, 29.7-50, 50-54, 118-136, 136-144, 144-148, 148-174, 406-420, 420-450, 450-410 and 470-512MHz. Keypad Entry; Backlit LCD Display and Controls; Automatic Search for Aircraft, Police, Marine and Emergency Services; Priority; Channel Lockout; Direct Channel Access; Weather Search; Scan Delay; Track Tuning; Memory Lock. Uses 13.8V DC or 117V with AC adapter. Mobile mounting bracket included. 6⅛"w x 1⅝"d x 7⅜"d, 1 lb., 3 oz **$229.95**

UNIDEN BC-760XLT • 100 programmable channels, 5 scanning banks, 12 bands. Features and coverage same as BC-590XLT, plus 806-956MHz. Uses 13.8V DC or 117V with AC adapter. 6⅛"w x 1⅝"d x 7⅜"d, 1 lb., 3 oz..... **$289.95**



UNIDEN BC-800XLT • 40 programmable channels, 12 bands: 20-29.7, 27.9-50, 50-54, 118-136, 136-144, 144-148, 148-174, 406-420, 420-450, 450-470, 470-512, 806-912 MHz. Keyboard Entry; Instant Weather; Priority; Track Tuning; Scan Delay; Automatic Search; Automatic Squelch; Direct Channel Access; Channel lockout. Uses 117 VAC or 13.8 VDC with optional DC cord. 12½"w x 4½"h x 9¼"d, 7⅛ lbs.....**$249.95**

UNIDEN BC-55XLT (left) • 10 channel, programmable handheld scanner, 10 bands. Covers 29-29.7, 29.7-50, 50-54, 136-144, 144-148, 148-174, 406-420, 420-450, 450-470 and 470-512MHz. Two-digit LCD Display; Review; Channel Lockout; Battery-Low Indicator; Memory Back-Up; Built-In Delay; Direct Channel Access; Track Tuning. AC/DC operation – uses optional alkaline or rechargeable nicad batteries or AC charger and adapter. 2⅝"w x 6¾"h x 1½"d, 10½ oz **$119.95**

UNIDEN BC-70XLT (center) • Pocket-sized 20 channel, programmable handheld scanner, 10 bands. Covers same as BC-55XLT. LCD Display; Priority; Lockout; Scan Delay; Auto. Search; Track Tuning. AC/DC with built-in NiCad pack or included charger/adapter. 2¾"w x 6¾"h x 1½"d, 10½ oz **$159.95**

UNIDEN BC-100XLT (right) • 100 channels, 10 scanning banks, 11 bands with coverage same as BC-55XLT, plus Aircraft and Weather bands. Illuminated LCD Display; Weather Search; 10 Priority Channels; Channel Lockout; Scan Delay; Automatic Search; Track Tuning; Direct Channel Access. Battery & charger included. 2¾"w x 7½"h x 1⅜"d, 1¼ lbs **$179.95**

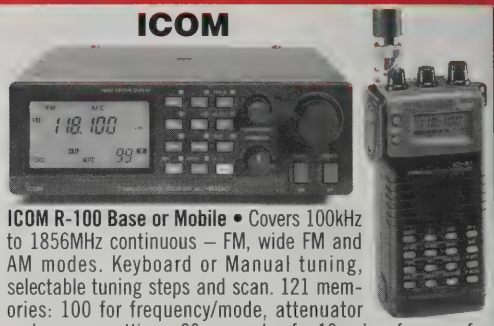
UNIDEN BC-200XLT • Looks, size and features same as BC-100XLT except – 200 channels, 20 scanning banks and 12 bands. Coverage is the same, plus 806-956MHz band **$259.95**

COBRA

COBRA SR-900 • 16 channel, programmable Desktop scanner with 11 bands. Covers 29-29.7, 29.7-50, 50-54, 136-144, 144-148, 148-174, 162.4-162.55, 406-420, 420-450, 450-470 and 470-512MHz. Keyboard Entry; LED Channel Display; Priority, Instant Weather Button; Lockout, Review; Scan; Automatic Scan Delay; Direct Channel Access; Memory back-up. AC adapter included. 9½"w x 2½"h x 7⅛"d, 1⅝ lbs ... **$99.95**

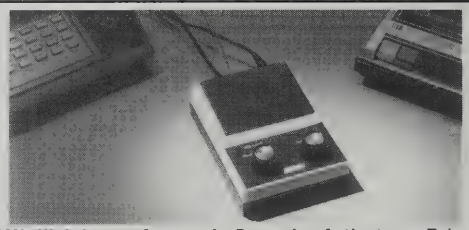
COBRA SR-11 (rt.) • 10 channel, programmable Handheld scanner with 3 bands, 10 memories. Covers 29-54, 136-174 & 400-512MHz. LCD 9-digit display for channel/frequency, status of lockout, squelch and key lock. Step Tuning; Up/Down Buttons; Scan; Key Lock; Auto. Squelch; Lockout; Fast/Slow Tuning. Uses "AA" batteries. 2¾"w x 6⅛"h x 1⅛"d,7½ oz. **$129.95**

ICOM



ICOM R-100 Base or Mobile • Covers 100kHz to 1856MHz continuous – FM, wide FM and AM modes. Keyboard or Manual tuning, selectable tuning steps and scan. 121 memories: 100 for frequency/mode, attenuator and preamp settings; 20 scan edge for 10 pairs of ranges for programmed scan; 1 priority. 24-hour clock/timer, 3 ant. inputs, telescoping ant. and mobile mt. Requires 13.8V DC @ 1A, optional AC adapter. 5¾"w x 2"h x 7½"d, 3 lbs..... **$599.95**

ICOM R-1 Mini-handheld • Covers 100kHz-1300MHz – FM, wide FM and AM modes, 100 memory channels. Scan modes: Programmed, Memory, Selected Mode Memory, and Auto Memory Write. Rotary tune or direct keyboard entry, LCD display, 24-hour clock/timer, adjustable LCD contrast, signal indicator, power-saver function. Built-in NiCad batteries; optional batteries or 6-16V DC. 1⅞"w x 4"h x 1½"d **$449.95**



BMI *Nightlogger* Automatic Recorder Activator • Takes audio output from any 8Ω source and provides 600Ω audio and voice activated (VOX) relay operation for triggering a recording device. Useful for scanners and other radios when recording of intercepted audio is desired. No wiring – only three plug-in connections. One goes to the radio's external speaker jack, the other two go into the remote and microphone jacks of a cassette recorder. For ham purposes this device can make a simple crossband repeater by connecting two HT's. Built-in monitor speaker with volume control, VOX sensitivity and delay controls. AC adapter supplied **$69.95**

Find the Action with a . . .

Betty Bearcat Frequency Directory

Lists frequencies by Listening Area! – Police, Fire, Ambulance, Government, Transportation & many others. ***Includes:*** Frequency cross reference section; FCC frequency allocation chart; Log; Reference data; Codes, etc • **$14.95 ea.**

EASTERN U.S.A. Edition • covers the Eastern Time Zone.

GREAT LAKES Edition • covers Great Lakes area

WESTERN U.S.A. Edition • covers Central Time Zone & West.

SCANNER TERMS . . .

PROGRAMMABLE • all frequencies are entered directly from the keypad.

DIRECT CHANNEL ACCESS • go directly to any channel without stepping through other channels.

PRIORITY • a channel that is constantly monitored to prevent missing important transmissions.

REVIEW • verifies frequency entered on each channel.

AUTOMATIC SEARCH • automatically finds new active transmissions in any of the bands.

SERVICE SCAN • automatic search of preprogrammed police, fire, emergency, aircraft and marine frequencies.

INSTANT WEATHER • automatically finds National Weather Service (NOAA) broadcasts in your area.

SCAN DELAY • In scan mode: adds short delay on desired channels to prevent missed transmissions – then resumes.

CHANNEL LOCKOUT • allows unused or busy channels to be shipped over when in scan mode.

AUTOMATIC SQUELCH • squelch responds to a factory preset signal level.

TRACK TUNING • allows scanner to achieve maximum sensitivity and reception on each channel.

MEMORY LOCK/KEYLOCK • prevents accidental reprogramming of frequencies.

A99

10 meter
Base Station Antenna

TWIN RING ADJUST-A-MATCH TUNING

The **A-99** is a half wave over a quarter wave variable mutual inductance tuned antenna for 10–17 meters.

It's **economical** and **easy to use!** – it features the **Solarcon** Twin Ring "Adjust-A Match" tuning which makes it possible to tune the input to the antenna and obtain the optimum SWR over a wide range of frequencies.

Simple! - raising the rings raises the frequency and lowing the rings lowers the resonant frequency.

A real beauty! – rugged three-piece white fiberglas construction with triple plated brass fittings. It's easy it assemble and install.

A-99 Specifications

Height	17 ft. 8 in.
Sections	3
Bands	10–17 meters
Gain	3 dBi
Power Limit	2000 Watts
Radiation Angle	<20 deg.
Grounding	DC Grounded
Mounting	1-1/2" mast max.
Connector	SO-239

PRICE $59.95

SOLARCON ANTENNAS

MFJ Keyers

MFJ-422B Keyer-Paddle Combination

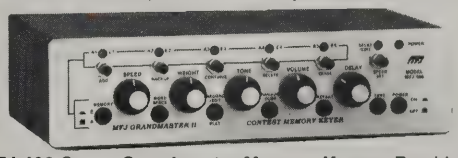
Keyer unit installs on a Bencher Iambic Paddle. If you already own a Bencher buy just the keyer unit – if not, buy the Combo. Speed: 9-50 wpm, adjustable weight/tone, dot-dash memories, sidetone. Semi-automatic/tune or automatic modes. Keys grid block, cathode or solid state circuits. Uses 9V battery or AC adapter. 4⅛" x 2⅝" x 5½"d.

MFJ-422B Combo **$124.95** • **MFJ-422BX** Keyer only **$74.95**

MFJ-401B Compact Electronic Keyer (left) • Speed adjustable from 8-50 wpm. Works with squeeze, single lever or straight keys. Sends iambic, automatic, semi-automatic and manual modes. Dot-dash insertion, semi-automatic dots and manual dashes, dot-dash memory, self completing dots and dashes, jam proof spacing. Positive or negative keying for tube or solid-state transmitters. Front panel controls for auto/semi-auto, speed, volume and on/off. Internal controls for weight and tone. Uses 9V battery or MFJ-1305 AC adapter. 4" x 2" x 3½" **$49.95**

MFJ-407B Deluxe Electronic Keyer (right) • Same functions as the MFJ-401B described above, but front panel controls are: on/off, speed, weight, auto/semi-auto, tone, tune and volume. Rear switch selects A or B-type iambic keying. Has built-in speaker. 7" x 2" x 6"d..... **$64.95**

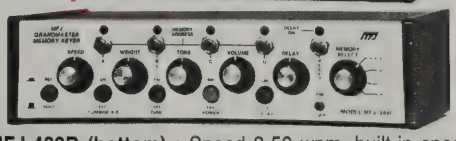
MFJ-1305 • AC adapter for above keyers..... **$12.95**



MFJ-486 Super Grandmaster Memory Keyer • Provides 4 to 100 wpm code speed. Stores 8K characters in 10 soft partitioned memories. Automatic serial numbering, auto message repeat and beaconing. CW Word Processor™ with insert, edit, and delete features to change memory message without total re-key. Built-in code course program for learning the code. 12-15 VDC. 2½" x 2½" x 6"... **$169.95**

MFJ-77 • Wired remote for convenient control of memories and CW Word Processor™ functions at your paddle. **$19.95**

Original Grandmaster Memory Keyers



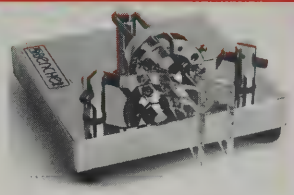
MFJ-482B (bottom) • Speed 8-50 wpm, built-in speaker. Store up to twelve 25 character messages, plus a 100, 75, 50, or 25 character messages to give you up to three 50 character messages. Repeat any message continuously and leave a pause between repeats. Insert in playing message by sending. LEDs show which 25 character message is in use and when it ends. Uses 9V battery for memory and 12-15 VDC. 8" x 2" x 6"..... **$99.95**

MFJ-484C (top) • Speed 8-50 wpm, built-in speaker. Store four 25 character messages or a 50 and two 25 character messages in 1024 bits of memory. Repeat. Memory LED. Speed, volume controls on front. Weight and tone controls, tune function.. 12-15 VDC. 6" x 2" x 6"..... **$134.95**

MFJ-1312 • AC adapter for Grandmasters **$12.95**

MFJ-557 • Deluxe Code Practice Oscillator. Morse key and oscillator mounted together on a heavy base Built-in speaker, tone and volume controls, earphone jack. Uses 9V battery. 8½ x 2¼x 3¾" **$24.95**

BENCHER Paddles

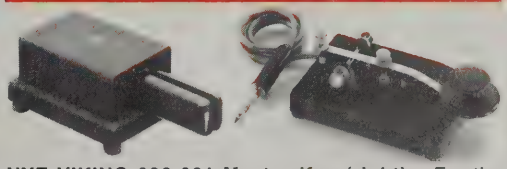


High Quality IAMBIC & SINGLE LEVER Paddles

Full range adjustment of tension and contact spacing, self adjusting nylon and steel bearings. Heavy gold plated solid silver contact points and polished lucite paddles. Precision machined chrome plated brass frame and heavy steel base with non-skid feet. Available with bases in black painted and textured, chrome or gold plated.

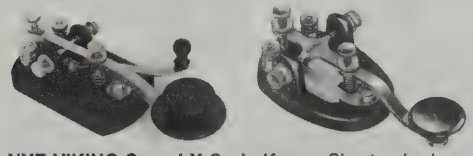
Iambic:	Single Paddle:
BY-1 • black base.. **$69.95**	**ST-1** • black base .. **$69.95**
BY-2 • chrome base **84.95**	**ST-2** • chrome base . **84.95**
BY-3 • gold base.... **219.95**	**ST-3** • gold base **219.95**

NYE VIKING Keys



NYE VIKING 330-001 Master Key (right) • For the expert, but perfect for the beginner! Isolated contact assembly keeps keying circuit separate from all parts. Heavy die-cast body, no need to secure to table. Gold plated silver contacts, adjustable action key arm, Navy-type knob, 3 ft. cord with plug, black plated finish.... **$59.95**

NYE VIKING SSK-001 Super Squeeze Key (left) • Use with an electronic keyer for fast comfortable electronic keying action. Gold-plated silver contacts, nickel-plated brass hardware, heavy base with non-skid feet **$49.95**



NYE VIKING Speed-X Code Keys • Six standard models (right), four Heavy Duty models (left) – all with gold-plated heavy silver contacts, adjustable key action and heavy die-cast bases. With and without switches, brass or nickel plated hardware, standard or Navy-type knobs. Optional matching heavy steel base plate with non-skid feet.

See NYE VIKING in the Price List

VIBROPLEX Keys

"The Oldest Name in Amateur Radio"

VIRBOPLEX Original "Bug" • Press the thumb piece to the right and the vibrating bar produces one, or a string of dots – automatically. Dashes are made to the left, manually A sliding weight adjusts the speed for 20 wpm or less. Silver contacts, non skid feet. **Standard model** has painted base and chrome top parts, **Deluxe model** has polished chrome base and top parts and jewel movements.

Standard – $99.00 • Deluxe – $120.00

VIRBOPLEX Original Presentation • Finest quality semi-automatic key. Real jewel movements and widest speed range from less than 20 to 55 wpm+. Bright chromium parts mounted on a 24-caret gold base plate **$184.95**

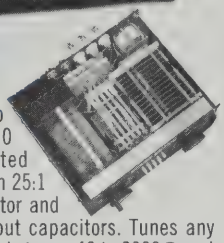
VIRBOPLEX Vibrokeyers • **Single lever paddle** initiates the automatic dots and dashes of an electronic keyer. **Iambic model** allows utilization of automatic dot/dash insertion and other unique keyer features.. See Price List

VIBROPLEX BRASS RACER IAMBIC • Solid brass Iambic paddle on a polished hardwood base **$65.00**

VIBROPLEX EK-1 • Solid brass Iambic paddle with an 8044 electronic keyer built into the hardwood base. Iambic, dot/dash insertion, adjustable speed..... **$139.95**

NYE - accessories

NYE MB-V-A 3KW Antenna Tuner



Low-pass Pi-Network tuning 1.8 to 30MHz continuous (160 to 10 meters. Heavy duty silver plated continuously variable inductor with 25:1 vernier dial. 7KV variable capacitor and 15KV switch selected fixed output capacitors. Tunes any antenna 1/4-wave length or longer between 40 to 2000Ω and provides harmonic suppression. (***Note:*** Will not tune *some* antennas at 1.8MHz). Automatic, metering of SWR without reset or calibration. Separate RMS wattmeter (300 or 3KW) - automatically switched. Precision 2½" recessed and backlighted meters display SWR and power - continuously. Rugged, silver plated 5-position pushbutton antenna switch selects 4 antennas (2 coaxial, single wire and balanced line) and tuner bypass. Trifilar-wound 3KW toroid balun provides balanced output from 200 to 1000Ω and unbalanced output down to 20Ω. Requires a standard 9V battery for meter circuits and a external 12V DC source for meter lights (*both items not supplied*). 14¾"w x 6¾"h x 12¼"d, 18 lbs..... **$699.95**

Other Models:

MB-IV-A1 • Antenna tuner; same specifications as MB-V-A except no antenna switching circuitry or balun **$569.95**

MB-IV-A2 • Antenna tuner; same specifications as MB-V-A with balun but no antenna switching circuitry **$599.95**

MB-V-B • Antenna tuner; same specifications as MB-V-A except no power or SWR metering capability **$549.95**

NYE Power Monitor System

Combination fully automatic SWR meter, peak and average reading wattmeter, reverse power meter and self contained ALO relay circuit. Full-wave detection and adjustable hold time captures RF peaks and shows true PEP output. The separate SWR meter reads direct, without adjustment, from 0.5W-5KW. The ALO circuit provides for automatic shutdown of your linear amplifier in case an excessive SWR condition should unexpectedly occur. Powered by nicad batteries which are kept charged by a small amount of the applied RF or by the separate AC adapter supplied for charging and backlighting of panel meters. Separate calibrated remote coupler covers 1.8 to 30MHz. Two models: RFM-003 (3KW sensor and meter range) or RFM-005 (5KW sensor and meter range). *Optional* 300 or 500W couplers. 3⅜"h x 7½"w x 5"d, SO-239 connectors.

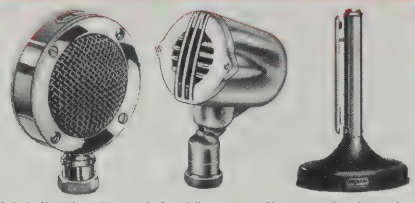
RFM-003 – $329.95 • RFM-005 – $349.95

NYE Phone Patch (left) • Interfaces your transceiver with the telephone line for conductiong phone patch operations. Automatic line level control for comfortable operator monitoring and NULL control for superb VOX operation. When installed in-line, full microphone function is retained. 1⅝"h x 7⅞"w x 4¼"d. Compatible with all transceivers.

Model 047-001 • has 4-pin microphone connector **$129.95**
Model 047-002 • has 8-pin microphone connector **144.95**

NYE Low Pass Filter-020-001 (right) • Installs between rig and 52Ω coax fed antenna systems. Eliminates TVI caused by transmitter harmonics falling in the TV bands. Usable from 1.8 to 30MHz, rated at 2KW and will handle 5KW SSB peaks. Three constant-K, plus two precision tuned M-derived sections give a flat, low loss passband and stopband for over 65dB attenuation above 57MHz. SO-239 connectors **$45.00**

ASTATIC - microphones



D-104-L (left) • The original "super talk power" microphone, a favorite of hams for many decades. It's high output and 30-7500Hz response with rising characteristics between 500-4000 Hz, make it ideal where maximum intelligibility throughout the voice range is important. Shock proof cartridge with high-Z crystal element, metal sealed for protection. Solid machined brass parts, heavy mesh grille–all chrome plated, 3" dia. x 1⅛"d, 14 oz. Requires T-UG-9 stand..... **$39.95**

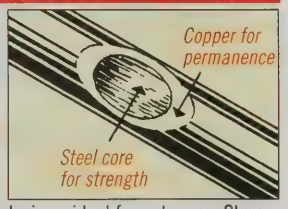
10DA-L (center) • High-Z dynamic microphone with top amateur SSB performance. Features a controlled 300-3000 Hz response that provides high attenuation of the unwanted sideband and better copy through heavy interference. 2 7/16"w x 2⅛"h x 3 1/16"d, 17 oz. Requires T-UG-9 stand **$49.95**

T-UG9 Microphone stand (right) • Accepts the D-104-L or 10DA-L heads above. Has a built-in adjustable amplifier with an output impedance that matches most transmitters. Side switch bar for easy PTT with slide-up clamp for locking down. 8½"high *w/o* mic head; base 5½" dia. Chrome plated neck, grey painted base. 6-wire coiled cable (audio with shielded ground, and 4 control. wires). Requires 9V battery **$49.95**

CROWN METAL

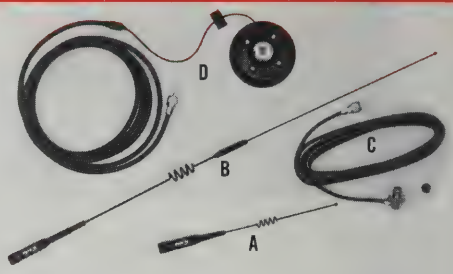
COPPERWELD ANTENNA WIRE

MOLTEN-WELDING makes the two metals inseparable!



Solid bare copper-over-steel wire – ideal for antennas. Strong, has very little stretch and long service life. Copper covering for low resistance and easy to soldering. Choice of 12, 14 or 18 ga., in 100, 150, 250, 500 or 1000 ft. rolls..... **See Price List**

COMET antennas



Dual Band Mobile Antennas • Cellular "look-alikes"–lightweight, slim, all black. Factory tuned, normally need no adjustment, but fine tunes by sliding element up/down.

Model B-10 (A) • Covers 2m and 440MHz. with 2.15 dB gain on 440. 50Ω, VSWR <1.5:1, handles 50W. Length: 12". Requires 3.5D4M, MS-5LXMM or other PO-style mount...**$38.95**
Model B-10NMO • Same but with NMO mount..... **38.95**

Model B-20 (B) • 2.15 dB gain on 2m, 5dB on 440. 50Ω, VSWR <1.5:1, handles 50W. Length: 31".Requires 3.5D4M, MS-5LXMM or other PO-style mount **$49.95**
Model B-20NMO • Same but with NMO mount.....**49.95**

3D4M (C) • 5/8" hole mt w/13' coax /UHF connector..... **$22.95**

MS-5LXMM (D) • Magnetic mt. w/12' coax/UHF connector **$56.95**

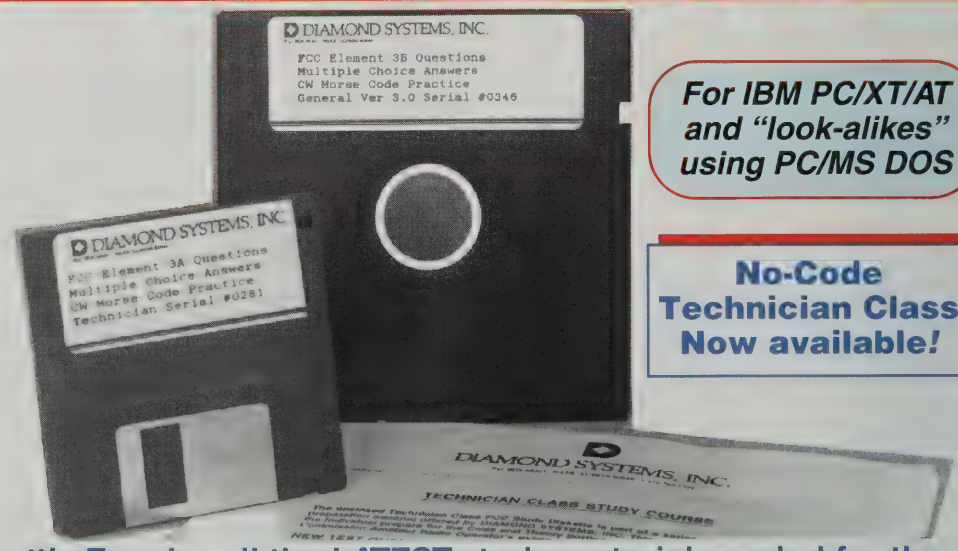
CX-725 Tri-Bander Base Antenna (not pictured) • One piece heavy duty fiber glass construction. Provides 2.15 dB gain on 6-meters, 6.2dB on 2-meters and 8.4dB on 440MHz. 50Ω, VSWR <1.5:1, handles 200W. 8 ft. long, 3 lbs **$139.95**

More COMET antennas, triplexers & mounts - See Index

ANLI

Model AL-800 • A dual band handheld antenna for 2M and 440MHz. Comprised of a base section with BNC connector and two removable whip sections – one telescoping that provides 3dB gain on 2M and 5.2dB on 440MHz with a length of 10½" collapsed and 34" extended. The other is a 7" slim rubber whip which makes the overall antenna length 9¼" for compactness and regular performance. **$36.90**

DIAMOND SYSTEMS - software
Amateur Radio License Study Courses



For IBM PC/XT/AT and "look-alikes" using PC/MS DOS

No-Code Technician Class Now available!

It's Easy! . . **all the LATEST study material needed for the FCC Exam • Theory, Code, and Regulations – are included.**

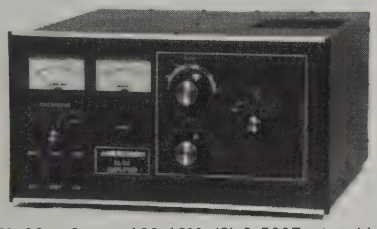
This proven course material is the sure way to upgrade in a hurry! It provides exam preparation material for Amateur Radio Licenses Novice through Extra class - also No-Code Technician! Includes COMPLETE FCC VEC QUESTIONS, ALL SUB-ELEMENTS, generates thousands of PRACTICE TESTS, KEEPS SCORE, and contains the most advanced CW code teaching program available • **See Price List**

HF Power Amplifiers

AMERITRON Amplifiers

AMERITRON AL-80B • Covers 1.8. 3.5, 7, 14, 18, 21 and 24MHz. Single 3-500Z; 85W drive for 1KW PEP SSB or 850W CW out. Built-in supply. 14"w x 8"h x 15½"d, 52 lbs **$1069**

AL-82
AL-1200
AL-1500
appearance
is similar.



AMERITRON AL-82 • Covers 160-12M. (2) 3-500Zs, two bias settings for CW/RTTY or SSB. 1500W continuous output at nearly 70% plate eff. Built-in supply with1.8KW CCS rated Hypersil® transformer. 10"h x 17"w x 18"d, 76 lbs..... **$1749**

AMERITRON AL-1200 • Covers all ham bands 1.8 to 21MHz and WARC bands. Single Eimac 3CX-1200A7; 110W drive for 1.5KW output. Heavy-duty silver-plated tank components, built-in commercial rated power supply with Hypersil® transformer. 10"h x 17"w x 18"d, 83 lbs..... **$1699**

AMERITRON AL-1500 • Covers 160-12M. Single Eimac 8877 final tube delivers 1500W output with 65W drive.Time delay start-up protects tube. 10"h x 17"w x 18"d, 77 lbs. **$2199**

AMERITRON AL-811 Linear Amplifier • Covers 160-12M. (3) 811A tubes, 600W PEP SSB and 500W CW output. Tuned input is an easy match for solid state rigs. Vernier drive plate tuning, illuminated grid and plate voltage/current meters. Built-in 120V power supply. 16"d x 13¾"w x 8"h, 30 lbs **$589.95**

AMERITRON AL-811H Linear Amplifier • Similar to AL-811, but has (4) tubes and rated 800W PEP..... **$719.95**

KENWOOD Amplifiers

RPS
or
Air Freight
Shipment
only

KENWOOD TL-922A • Covers 160-15M. (2) 3-500Zs; 80W drive for 1500W PEP SSB output. Rugged, heavy-duty electrical and mechanical construction of the highest quality. Case has convenient recessed carrying handles. Built-in power supply. 15½" x 7½"h x 16¾"d, 80 lbs **$1698**

The HF amplifiers shown on this page are user modifiable for 10-meters for those with a valid, current amateur radio license. Please contact the manufacturer for information and parts.

MasterCard VISA DISCOVER **Use your CREDIT CARD** AMERICAN EXPRESS

YAESU Amplifier

YAESU FL-7000 • Covers 160-12M. *Solid-state,* "no tune" with built-in automatic antenna tuner and power supply. 70W drive for 600W output. Full break-in for CW, HF Packet and AMTOR. Tuner memory holds antenna selection and tune settings. Circuit automatically turns off amp and attempts to rematch if SWR exceeds 2:1. Automatic selection of 4 antennas with *optional.* unit. 5"h x 15"w x 15"d, 66 lbs..... **$1979**

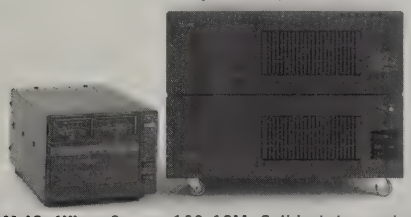
JRC Amplifier

RPS or Air Freight Shipment only

JRC JRL-2000F HF MOSFET Linear • Incorporates 48 RF power MOSFETS to ensure low distortion and clean output, plus a high speed automatic tuner with a memory capacity of 1820 channels. In addition, a built-in high efficiency switching power supply, an automatic antenna selector and a wireless remote control. Full break-in capability. Covers 1.8, 3.5, 7, 10, 14, 18, 21, and 24 MHz bands. Drive: 100W maximum. Rated output for SSB is 1KW 100% duty cycle, continuous. FSK/FM is1 KW 100% duty cycle, 1/4 hour. 12"h x 17"w x 16"d, 85 lbs.... **$3998**

ICOM Amplifiers

ICOM IC-2KL • Covers 160-12M. *Solid-state,* no tune-up. 50 to 80W drive provides 500W PEP SSB output or 500W CW for Separate amplifier and 110/220V power supply units. Automatic operation with ICOM transceivers. **Both units are:** 4½ "h x 9½"h x 15⅛"d, total weight: 45 lbs **$1768**



ICOM IC-4KL • Covers 160-12M. Solid-state, no tune up. Separate controller and amplifier. Uses four - 8 transistor modules; 1KW output @ 100% duty cycle. Built-in automatic antenna tuner with memory and 40V/60AMP power supply. Dual meters show SWR, final amplifier current and temperature, and output. Automatic operation with ICOM transceivers. **Controller unit:** 5¾"h x 7¾"w x 13½"d, 66 lbs. **Amplifier unit:** 11¾ "h x 16¾ "w x 18"d, 79 lbs **$5598**

FLORIDA GULF COAST AMATEUR RADIO COUNCIL

ARRL FLORIDA STATE
1992 Suncoast Convention & Computer Show

Saturday & Sunday, Nov 21 & 22 1992

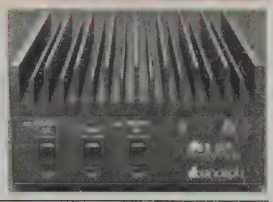
9-5 on Saturday • 9-3 Sunday

Florida State Fair Grounds – Expo Hall • Interstate - 4 and 301 • Tampa Florida **AES will display there!**

VHF/UHF Power Amps

RF CONCEPTS

- FM/CW/SSB modes
- GaAs FET preamplifier
- Overdrive protection
- 12V DC
- RFC 1-year warranty, 6 months on RF power transistors.



Model	input	output	amps	SALE
2-meters				
2-23	0.2-5W	30W @ 2W in	5	$124.95
2-217	2W	170W	25	299.95
2-117	10W	170W	25	299.95
2-317	0.2-30	170W @ 30W in	22	259.95
2-417	0.2-50W	170W @ 45W in	22	259.95
220MHz				
3-22	5W	20W	4	$124.95
3-211	2W	110W	22	299.95
3-112	0.2-15W	120W @10W in	12	299.95
3-312	30W	120W	22	259.95
440MHz				
4-32	3W	20W	4	$169.95
4-110	10W	100W	22	349.95
4-310	30W	100W	20	319.95
Dual Band - 2m/440 MHz				
2/70*	(3W) (5W)	(30W) (20W)	6	$219.95
2/70G	(3W) (5W)	(30W) (20W)	6	239.95

* denotes no built-in receive preamplifier

MIRAGE

SSB/FM/CW • Automatic antenna changeover with adjustable SSB delay • 10dB gain Low Noise receive preamp • Overload protection • Optional remote control • Mobile use, or Base with an adequately rated DC power supply (ASTRON power supplies recommended) • MIRAGE 5-year Warranty, 1 years on RF power transistors.

Model	MHz	input	out	amps	preamp	SALE
A-1015G	50-54	10W	150W	23	yes	$329.95
A-1035G	50-54	10W	350W	23*	yes	529.95
B-23/S	144-148	2W	30W	5	no	109.95
B-23G	144-148	2W	30W	5	yes	149.95
B-215G	144-148	2W	150W	20	yes	299.95
B-108G	144-148	10W	80W	12	yes	189.95
B-1016G	144-148	10W	160W	25	yes	299.95
B-1030G	144-148	10W	300W	48	yes	529.95
B-1060G	144-148	10W	600W	52*	yes	829.95
B-2516G	144-148	30W	160W	25	yes	259.95
B-2530G	144-148	30W	300W	48	yes	529.95
B-2560G	144-148	25W	600W	52*	yes	829.95
B-5016G	144-148	50W	160W	24	yes	259.95
B-5030G	144-148	50W	300W	48	yes	529.95
B-5060G	144-148	50W	600W	45*	yes	829.95
C-22	222-225	2W	20W	5	no	109.95
C-22G	222-225	2W	20W	5	yes	149.95
C-211G	222-225	2W	110W	20	yes	299.95
C-106G	222-225	10W	60W	12	yes	189.95
C-1012G	222-225	2W	20W	5	yes	299.95
C-1022G	222-225	10W	220W	20*	yes	529.95
C-2512G	222-225	30W	120W	20	yes	279.95
C-2522G	222-225	30W	200W	42	yes	529.95
C-5012G	222-225	50W	120W	20	yes	279.95
C-5022G	222-225	50W	240W	42	yes	529.95
D-15N	425-450	2W	15W	3	no	169.95
D-26N	430-450	2W	60W	12	no	239.95
D-1010N	430-450	10W	100W	15	no	349.95
D-3010N	430-450	30W	100W	20	no	319.95
D-100-ATVN	430ATV	1W	52W	20	no	349.95
D-1010ATVN	430ATV	10W	100W	20	no	349.95

* at 28VDC **N** denotes Type-N connectors

RC-1 Remote Control Head • for all **MIRAGE** amplifiers except the B-23S, B-23G, C-22G and D-26N.....**$40.00**

MFJ - tuners, switches, dummy loads & meters

MFJ-16010 Random Wire Tuner (top) • Covers 1.8-30 MHz and handles 200W PEP Lets you operate all bands anywhere – apartment, motel, camping, etc. with any transceiver using a random length of wire. Ultra small – 2w" x 3"h x 4"d..... **$39.95**

MFJ-901B Versa Tuner • Covers 1.8-30 MHz continuously and handles 200W PEP. Matches coax, random wires and balanced lines (built-in 4:1 balun). Very popular for use between a transceiver and a final amplifier for proper matching and full drive, or as a mobile tuner. The *smallest* Versa Tuner – 5"w x 2"h x 6"d **$59.95**

MFJ-945D Mobile Tuner • Covers 1.8-30 MHz and handles 300W PEP. Extends mobile antenna bandwidth – eliminates having to frequently stop and adjust whip. when making frequency changes. Matches coax only. Built-in cross-needle SWR bridge and wattmeter with 50/300 and 5/30W ranges. 8"w x 2"h x 6"d..... **$84.95**

MFJ-941E Versa Tuner II • Covers 1.8-30 MHz and handles 300W PEP. Matches everything – coax fed dipoles, vees, whips, verticals, beams, random wires and balanced lines (built-in 4:1 balun). Lighted Cross-Needle SWR/Power meter with 300/50W and 30/5W ranges. Eight position antenna switch selects 2 coax lines (direct or thru tuner), random wire/balanced line or external dummy load. 10⅝"w x 2⅞"h x 7"d..... **$99.95**

MFJ-948 Deluxe Tuner • Covers 1.8-30 MHz and handles 300W PEP. Has all features of MFJ-941D plus it has a larger lighted peak reading Cross-Needle SWR/Power meter with 300/50W & 30/5W ranges and lamp switch..... **$119.95**

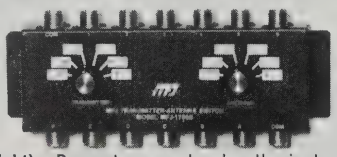
MFJ-949E Deluxe Versa Tuner II • Same power, tuning and switching capability as MFJ-941E described above. In addition it has a lighted peak reading Cross-Needle SWR/Wattmeter and built-in 300W 50 Ω dummy load. 10⅝"w x 2⅞"h x 7"d..... **$134.95**

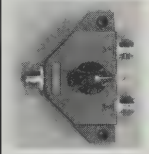
MFJ-962C Versa Tuner III • Covers 1.8-30 MHz and handles 1.5KW PEP. Matches coax, random wire or balanced line (built-in heavy-duty 4:1 balun). Lighted peak and average reading Cross-Needle SWR/Wattmeter with 200/2000W ranges. Six position antenna switch for 2 coax lines (direct or thru tuner), random wire and balanced lines. 10¾"w x 4½"h x 15"d **$209.95**

MFJ-986 Differential-T Tuner™ • Covers 1.8-30 MHz, handles 3KW PEP – tunes most antennas. Broadband T-network with roller inductor and differential capacitor. Lighted peak and average reading Cross-Needle SWR/Wattmeter with 200/50W and 2000/500W ranges. Roller inductor spinner knob with 3-digit turns counter, 6-position antenna switch and external dummy load switches, 4:1 balun. 10¾"w x 4½ "h x 15"d.....**$259.95**

MFJ-989C Versa Tuner V • ***Heavy-Duty!*** Covers 1.8-30 MHz, handles 3KW PEP, matches everything – coax fed, random wires and balanced lines. Roller inductor with spinner knob and 3-digit turns counter. Lighted peak and average reading Cross-Needle SWR/Wattmeter with 200/2000W ranges, 50Ω, 300 watt dummy load, 4:1 balun, 6 position antenna switch, tilt bail. 10¾"w x 4½"h x 15"d..... **$299.95**

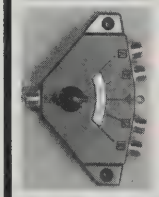
MFJ-921 VHF Tuner or MFJ 924 UHF Tuner • For base or mobile operation – the 921 covers 2-meters and 220MHz, the 924 covers 440MHz only. Handles 300W PEP and matches a wide range of impedances. Built-in SWR/Wattmeter. 8"w x 2½"h x 3" **$69.95**





MFJ 931 Artificial Ground (right) • Resonates a random length wire to act as a tuned counterpoise. Improves efficiency and pattern of **random wire antennas.** Eliminates problems caused by an inadequate ground.system. Covers I.8-30MHz, RF ammeter aids tuning. 7½"w x 3½"h x 7"d. Not for coax fed antennas..... **$74.95**

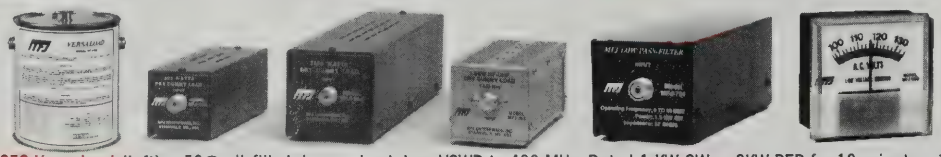
MFJ-1701 Antenna Switch (left) • 6 positions, 50-75Ω. Handles 2KW PEP or 1KW CW, 1.8-30MHz. SO-239 connectors. Unused positions grounded for lightning protection. 10"w x 3"h x 1½"d. **$34.95**



MFJ-1700B Antenna/Transceiver Switch (center) • Select from 1-6 antennas and 1-6 rigs in any combination. Tuner, SWR meter, linear, etc. can be left in line to operate with any combo. 50-75Ω. Handles 2KW PEP or 1KW CW, 1.8-30MHz. SO-239 connectors. Unused positions grounded. 10"w x 3"h x 1½"d **$64.95**

MFJ-1702B Antenna Switch (left/top) • 2 positions + center ground, 50Ω. Rated to 500MHz with <0.2dB loss. Handles 2.5KW PEP or 1 KW CW. >60dB isolation @ 300 MHz/>50 dB @ 450 MHz. Unused terminal grounds for lightning protection.....**$21.95** • **MFJ-1702BN** with Type N connectors, good to 1.1 GHz..... **$31.95**

MFJ-1704 Antenna Switch (left/bottom) • 4 position + center ground, 50Ω. Rated to 500MHz with <0.2dB loss. Handles 2.5KW PEP, 1KW CW, >50dB isolation @ 500MHz. Includes a replaceable lightning protection device that reduces lightning induced surges/static....**$59.95** • **MFJ-1704N** with Type N connectors **$69.95**



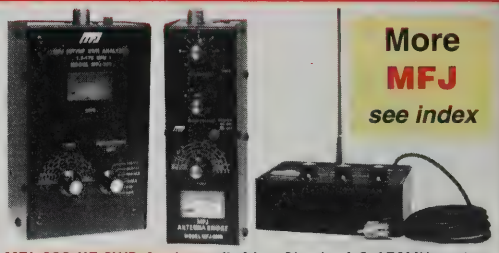
MFJ-250 Versaload (left) • 50Ω oil-filled dummy load. Low VSWR to 400 MHz. Rated 1 KW CW or 2KW PEP for 10-minutes, 1/2 rating for 20-min.; 200W CW, 400W PEP continuous. 7½"h x 6⅝" dia. Includes oil **$49.95** . • **MFJ-250X** without oil. **$29.95**

MFJ DRY DUMMY LOADS • Air cooled. Non-inductive 50Ω resistor in a perforated metal housing handles full rated load for 30-seconds. with a de-rating curve up to 5-minutes. **MFJ-260B (HF/VHF)** • 300W, 1-150MHz, 2½"w x 2½"h x 7"d ..... **$28.95.**
MFJ 264 (UHF) • Up to 650MHz, usable to 750MHz. Rated at 1.5KW for 10-seconds., 100W for 10-minutes. 3"w x 3"h x 7"d **$59.95**

MFJ-704 Low Pass Filter (right) • Reduces TVI caused by harmonics generated by 1.8-30MHz transmitters falling in the TV bands. 52Ω, low insertion loss and high harmonic attenuation. Legal power, SO-239 connectors. 3"w x 3"h x 9"d..... **$39.95**

MFJ-850 Line Voltage Monitor • Plug into any AC outlet – watch for surge or brown out conditions which could cause damage to rig, computer or other electronic equipment. Two-color expanded 95-135V scale with 2% accuracy. 2¼" x 2¼" x1½" **$19.95**

MFJ-1116 Deluxe DC Power Outlet • Connects to a 12V DC and provides 8 HD 5-way binding posts for powering multiple items. Built-in voltmeter, switch and fuse. RF bypassed, outlets spaced for banana jacks. 13½"w x 2¾"h x 2½"d.. **$44.95** • **MFJ-1112** has 5 posts, no meter or switch **$29.95**



More MFJ
see index

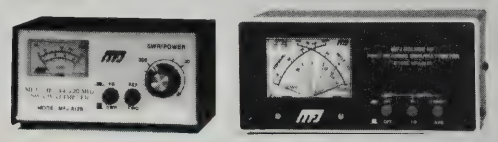
MFJ-209 HF SWR Analyzer (left) • Checks 1.8-170MHz antenna system SWR over an entire band without a transmitter or other equipment. Automatic! – set frequency with vernier tuning and read SWR or tune to find lowest SWR point. Frequency counter may be connected for digital readout. Uses 9V battery or 110V AC with MFJ-1312B adapter. 4" x 2" x 6¾ " **$99.95**

MFJ-204B Antenna Bridge (Center) • Easily determines if your antenna is too long or too short, measures resonate frequency and resistance to 500Ω. Built-in resistance bridge, null meter, tunable oscillator-driver for 1.8-30MHz. 4" x 2" x 2" Uses 9V battery or 110V AC with MFJ-1312 AC adapter..... **$74.95**

MFJ-1621 Portable Antenna (right) • Covers 40-10M, handles 200W. Operate from apartments, motels, campsites, vacation spots, etc. Consists of a 54" telescoping whip mounted on a self-standing 6" x 3" x 6"cabinet with a built-in antenna tuner, field strength meter and 50 ft. of coax..... **$74.95**

MFJ-249 SWR Analyzer™ • Covers 1.8-170MHz.. Has built-in 10 digit LCD frequency counter and vernier tuning. Automatic! - connect antenna, set analyzer to frequency and read SWR directly. Monitor SWR changes as you make adjustments. Separate BNC input for use as a frequency counter. 1 ppm 10MHz crystal time base; .01, .1, 1 and 10 sec. gate times. Uses 6 AA cells or 110V AC with MFJ-1312B adapter. 4"w x 2½ " x 6¾ "..... **$179.95**

MFJ-346 10-digit Frequency Counter • High accuracy measurements up to 600MHz with 10-digit accuracy. Compatible with the SWR analyzers and Antenna Bridge. 1/4"-high contrast LCD digits, four gate times. High accuracy 10ppm 10MHz crystal time base with adjustable calibration. High speed ASIC and custom LCD technology.Uses 9V battery or 110V AC with MFJ-1312 AC adapter... **$179.95**



MFJ-815B SWR/Wattmeter (right) • Covers 1.8-30MHz, lighted Cross-Needle meter simultaneously monitors peak or average, forward and reflected power and SWR at a glance, without adjustments. Two ranges: 200W/2000W forward 50/500W reflected. 7¼"w x 4½"h x 3½"d. Meter light requires 12V....**$69.95**

MFJ-817 • Same as MFJ-815B but covers 144 and 440MHz. Power ranges are 200/20W forward and 50/5W reflected .**$74.95**

MFJ-812B VHF SWR Wattmeter (left) • Covers 2-meters and 220MHz. Reads forward and reflected power on 30 and 300W scales and SWR. Reads SWR from 14MHz thru 220MHz and relative field stength from 1 to 220MHz. 4½"w x 2¼"h x 3"d...**$29.95**

MFJ-816 HF SWR Wattmeter • Similar to MFJ-812B but covers 1.8-30MHz. Reads forward/reflected power on 30 and 300W scales and SWR (no field strength). 4½"w x 2¼"h x 3"d **$29.95**

MFJ CW Transceivers

Single band, CW only, five models available • Compact portable, up to 5 watts output. ***Features:*** superhet receiver, speaker, vernier tuning, 8-pole crystal filter, RIT, AGC, semi/full break-in, sidetone. 12-15 VDC. 6"x 6½" x 2½.....**$154.95 each**

Models and Coverage

9015 (15M) 21-21.2 MHz
9017 (17M) 18.068-18.110MHz
9020 (20M) 14-14.075MHz
9030 (30M) 10.1-10.15MHz
9040 (40M) 7-7.15MHz

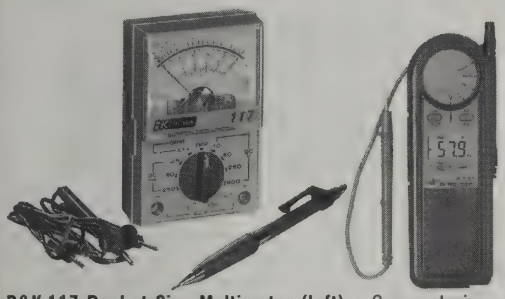
See Price List for Options

B&K-PRECISION
Test Instruments

B&K 388HD Test Bench™ (left) • 5 test instruments in one unit! – AC/DC Voltmeter; AC/DC Ammeter; Ohmmeter; Capacitance Meter and 20Hz-200kHz Frequency Counter. Also measure, Logic level (TTL) and Transistor Gain. (hFE); Audible Continuity Check; Diode Test. 3½ digit LCD, 41 ranges, 7½" x 3½" x 1¾", 13 oz. Test leads, battery, manual ..... **$109**[95]

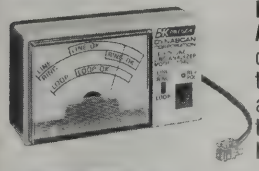
B&K 2860 Digital Multimeter (Center) • Ruggedized construction with water resistant case. AC/DC Voltmeter; AC/DC Ammeter (20A range); Ohmmeter; Audible Continuity Check; Diode Test. 3½ digit, 0.8" LCD readout. Automatic power off. 6⅞" x 3⅝" x 1¼", 12 oz. Test leads, battery, manual ..... **$84**[95]

B&K 2912 Digital/Bargraph Multimeter (right) • 3¾ digit, 0.5"h LCD readout + 41 segment bargraph. Auto/Manual Ranging. AC/DC Voltmeter; AC/DC Ammeter (10A range); Ohmmeter; 20Hz-400kHz Freq. Counter. Audible Continuity Check; Diode Test; Data and Peak Hold; Max/Min Memory. 40 ranges, 6¾" x 3¼" x 1¼", 13 oz. Leads, battery, manual **$126**[95]

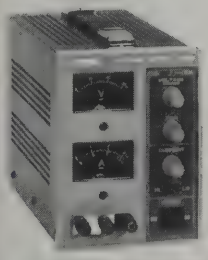


B&K 117 Pocket Size Multimeter (left) • Compact size – 1⅜" x 2⅜" x 3½". Measures AC/DC voltage; DC current; resistance and Decibels. Test leads and battery..... **$13**[00]

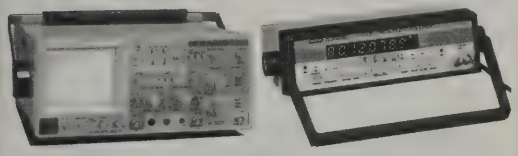
B&K 2701 Digital Multimeter (right) • Auto-ranging operation. Measures AC/DC voltage; AC/DC current and resistance. Diode test and audible continuity checker. 0.5", 3½ digit LCD readout, Data Hold freezes display reading, single handed operation, Built-in test probe holder and belt clip. 6.9"h x 2.3"w x 1"d, 7 oz. Leads, storage pouch and manual ..... **$49**[95]



B&K 1042 Telephone Line Analyzer • Checks condition of line from your phone jack to the central office. Verifies ring and line voltage levels, polarity. 2¾" x 5" x 1½", 7½ oz. No batteries required ..... **$22**[95]



General Purpose Power Supplies Lab Quality – reverse polarity, overload thermal and short circuit protected. Tight regulation, low ripple and conservatively rated for continuous operation at maximum rating **Model 1630 (shown)** Output 0-30V @ 3A. Coarse/fine voltage adjust and current limiting controls. 6¾ x 4¹⁄₁₆ x 12", 11 lbs..... **$269**[95]



B&K Oscilloscopes and Frequency Counters • For design, service or hobbyist. Scopes ranging from a 20MHz analog dual-trace unit to a versatile digital storage model. Multi-function counters built for continued high accuracy over a wide range of frequencies and operating conditions.

See the Price List in the Front of Book for a complete listing of the B&K line & Prices

DIGIMAX - Frequency Counters

DigiMax D-1200/D-612 Frequency Counters (left) • Ideal for solving difficult bench and field problems involving complex PLL, TV Tuner, VTR, and computer circuits. – plus, they can help to keep your QSOs on the correct frequency! Both models meet all FCC land mobile, broadcast, and telecommunications requirements. 9 digit LED, 0.5" seven segment display, leading zero suppression for error-free readings. Built-in 10 MHz, 0.1 PPM (20°-40°C) 10MHz proportional oven. When checking audio frequency tones, the built in audio multiplier in the D-1200 will resolve 1/1000th Hz in 10 sec., 1/100Hz in 1 sec., and 1/10 Hz in 0.1 sec. The. D-612 resolves 1 Hz in 1 sec.and 1/10 Hz in 10 sec. except when using the *optional* AM-12 audio multiplier, then the resolution is the same as the D-1200. The D-1200 also has a prescale input sensitivity control – and the D-612/D-1200 include a 1.2 GHz prescaler. Both operate from external 8-14.5VDC @ 200-500ma., internal 6 "C" cell battery pack, 115V with *optional* AC-12 adapter or *optional* BAC-12 rechargeable battery pack. 3¼" h x 8½ "w x 9"d. • D-612 does not include carrying handle.

DigiMax D-500/D-510A Frequency Counters (center) • Excellent accuracy and high reliability, make these units the perfect choice for the bench, tool box, or ham shack. The D-500 covers 50Hz to 512MHz and will resolve 1 Hz to 50 MHz and 10 Hz to 500 MHz; the D510A covers 50 Hz to 1 GHz. and will resolve 10 Hz to 1 GHz. 8 digit LED, 0.5" high seven segment display, leading zero suppression for error-free readings. Contains a 1 PPM (17° to 35°C) TXCO time base. Operates from external 8-14.5V DC @100-250ma., 115V with *optional* AC-12 adapter or *optional* BAC-5 rechargeable battery pack. 1½ "h x 5"w x 5¼ "d.

Optional Accessories • **AC-12** 9V DC Adapter; **AM-12** 10X/100X Audio Multiplier; **AM-500X** 10X/100X Audio Multiplier **B-12** Dry Cell Holder, switch for D-612; **BAC-12** Nicad battery Pack for D-612/D-1200; **BAC-5** Nicad Battery for D-500/D-510; **PA-1300** 10MHz to 1.3GHz 33dB Preamplifier; **RF-500X** 250W In-line RF Sampler; **T-1200** 21" BNC Telescopic Antenna

JPS Communications, Inc

JPS NIR-10 Notch Filter • Real time Digital Signal Processing (DSP) at 40MHz dramatically reduces white/pink noise, power line noise, ignition noise, and multiple hetrodynes. Includes variable BANDPASS filter modes (250Hz, 600Hz, 1800 Hz with a 1:1 shape factor) and automatic NOTCH filter mode. 12 VDC.....**$349**[95]

JPS NF-60 DSP Audio Spectral Notch Filter • Digital Signal Processing automatically and effectively removes MULTIPLE hetrodynes, tune-ups and CW or RTTY tones. Connects between the receiver audio output and speaker. 12 VDC, 1.7"h x 6"w x 4.3"d, 2 lbs.....**$160**[00]

K-COM
Telephone RF Interference Filters

Stops telephone RFI from .5-30MHz transmitters

Model RF-1 • Modular, for desk and cordless telephones, answering machines, FAX, etc.Impact resistant case, 6 in. cord .....**$14**[95]

Model RF-2 • Hard wired version for insertion inside phone jacks and through-out telephone wiring system. No soldering required .....**$8**[95]

Model RF-1/2-line • 2 line version for electronic key phone and 2 line telephone sets. Ind. std. RJ-14 connectors..**$19**[95]

We DEAL in Trade-in's . .

and are always looking for Clean, Late Model Ham Gear.

Look over the Goodies in this Catalog, then use this Handy Coupon to tell us what you've got and we'll rush you our quote . . Pronto!

Looking for good Used Gear? We always have hundreds of items in stock, just let us know what you need . . we may have it!

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5710 W. Good Hope Road
Milwaukee, WI 53223

I am interested in the following NEW Equipment:

_____

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I have to following to TRADE: _____

_____

_____

_____

Name _____ **Call** _____

Address _____

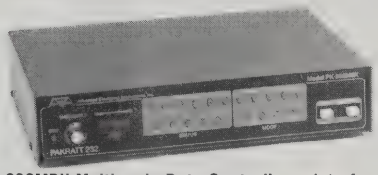
City/State _____ **Zip** _____

Packet Radio

AEA

AEA PK-88 HF/VHF Packet TNC (left) • Packet controller features RS-232 interface at 300-9600 baud, standard VHF operation, 18K byte Pakmail Maildrop, lithium battery memory backup, AX.25/Level2/Version 2, NET/ROM and KISS compatible, user friendly Host Mode software support. Cable included. 12-16V DC @ 550 mA. 7½"w x 6"d x 1½"h, 2¼ lbs.....**$134.95**

AEA PCB-88 PC Plug-in Data Controller (right) • Plugs into 8-bit expansion slot in IBM PC, XT, AT or compatible. Includes all features of the PK-88 and more! **$164.95**

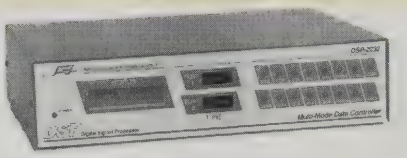


AEA PK-232MBX Multimode Data Controller • Interfaces any RS-232 compatible computer and any transceiver for all true digital modes: Packet, AMTOR/SITOR, Morse code, Baudot, and ASCII RTTY, WEFAX., NAVTEX and TDM reception. Both ports can handle HF and VHF. 18K byte PakMail Packet Maildrop, built-in FAX printer port, KISS compatible, Signal identification mode, built-in modem disconnect header. Host mode software support. All cables included. Comprehensive manual. 12-16V DC @ 800mA. 11"w x 8¼"d x 2½"h..... **$319.95**

AEA COM Packratt with FAX • Split terminal program for PK-232MBX and Commodore C64/128 operation. Includes both the COM Packratt and COM FAX programs on ROM cartridge, and a RS-232 to TTL interface **$74.95**

AEA PC Pakratt II with FAX • Split terminal program for PK-232MBX and IBM AT & XT or compatible computers written in Host mode language. Includes 3½"and 5¼" disk..... **$64.95**

AEA MacRATT with FAX •Prog. for Apple Macintosh ...**$64.95**



AEA DSP-2232 Multi-mode Data Controller • Latest DSP (digital signal processing) technology. Has two independent tuning indicators for each port. Includes all of the features of the famous PK-232MBX including the latest version of all available modes built-in, including PACSAT, OSCAR 13 and OSCAR 15. Transmit and receive high resolution multi-level WEFAX and WEFAX APT images and SSTV. 12-16DC @ 700ma. 11⅞ " x 9⅜" x 2⅞ ", 4 lbs. **$899.95**

MFJ

MFJ-1274 TAPR TNC-2 Clone Controller (top) • Work VHF, UHF, OSCAR and other non-FM packet. Interfaces with any computer with RS-232 serial port and appropriate terminal program. High performance switchable HF VHF modems. Includes EasyMail™ personal mailbox, WeFAX reception. KISS interface for TCP/IP. 256K EPROM and 32K RAM. 20 segmented LED tuning indicator, a TTL serial port, lithium battery memory back-up. AX.25/Level 2/Version 2 software, hardware HDLC for full duplex, true data carrier detect for HF, multiple connects. Comes with easy-to-read manual, transceiver interface cable (less connector, TTL serial port connector, and a power supply for 110V AC. Also works on 12V DC for portable, remote or mobile operation. 9½" x 1½" x 7½"..... **$129.95**

MFJ-1270B TAPR TNC-2 Clone • Same as MFJ-1274 above except does not have 20 LED tuning indicator..... **$109.95**

MFJ continued

MFJ-1278 Multi-mode Data Controller (bottom) • All Nine digital modes: Packet, AMTOR, RTTY, ASCII, CW, FAX, SSTV, Navtex, *plus* a full featured Contest Memory Keyer. Built-in printer port, 32K RAM, multi-gray level FAX/SSTV modems, 20 LED tuning indicator, random code generator, jacks for CW key paddle and CW sidetone. EasyMail™, dual HF/VHF radio ports, KISS mode, peripheral I/O port, transmit/receive audio and packet connect bell, RS-232 and TTL serial ports. Comprehensive manual with *Fast Start*™ section. Requires your rig and a computer with serial port and terminal program. AC supply included. 9½" x 9⅜" x 1½" **$249.95**

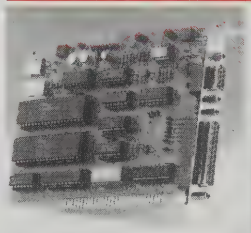
MFJ-1278T Turbo (top) • Same as MFJ-1278 above except includes as 2400 baud modem..... **$329.95**

MFJ Starter Pack • Includes computer interfacing cable, terminal software and instructions. Order **MFJ-1282B** disk or **MFJ-1283** tape for C64/128/VIC-20. **MFJ-1284** for IBM or compatibles or **MFJ-1287** for Apple Macintosh...**See Price List**

MFJ-1289 Multicom Program for MFJ-1278 • Supports color SSTV, 16-level FAX, packet picture. Menu driven, bursting with features - one key micro, call alert, auto router, auto parameters setting to TNC, text editor, 32K receiver buffer, and more! Complete with cable. (IBM 5¼")..... **$59.95**

MFJ-1272B Interface Box • Allows simultaneous connection of TNC and station microphone. Has a 4-pin microphone jack on the front panel and a 4-pin female plug is provided. RCA jacks for audio input and output **$34.95**

DRSI (Digital Radio Systems)



PC* Packet Adapter System for IBM PC and Clones

A half-length, plug-in option card for IBM PC XT/AT and compatible computers. **Type-1** has two ports; one with a 1200 baud AFSK modem for direct connection to an FM transceiver, the second accepts an external modem using either RS-232 or TTL levels. When used with the **DRSI HF*Modem**, the system becomes a complete HF/VHF dual-port TNC with simultaneous connects on both ports. **Type-2** has two 1200 baud VHF ports. Software includes a split screen, menu driven terminal program, terminate-and-stay resident background AX.25 device driver, stand alone TNC emulator and utility programs. Terminal program has pop-up windows and on-line help functions, scroll buffer, printer support, etc. **Type-3** has two serial ports for a special dual frequency HF/BBS system and is typically used with two DRSI HF*Modems at independent data rates up to 38,400 baud..... **See Price List under DRSI**

Kantronics Books • Packet Info

MS-DOS™ Introduction for Packet Users • by Gloria Medcalf, KA5ZTX. Takes the newcomer to packet radio through the initial configuration of a packet station. Assists those not familiar with MS-DOS™, the Microsoft Disk Operating System, and provides info about disk organization, terminal programs, and the important settings within computer programs as they relate to packet **$4.95**

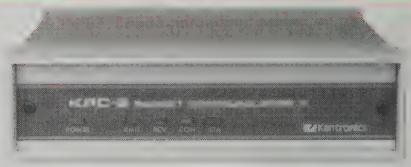
Using the RLI Mailbox • by Gloria Medcalf, KA5ZTX. The fast-start key to understanding RLI Bulletin Board Systems. With glossary and easy-find terms.....**$4.95**

Using the MBL Mailbox • by Karl Medcalf, WK5M. The fast-start key to understanding MBL Bulletin Board Systems. With easy-find terms.....**$4.95**

KPC/KAM Manual Set • A complete set of manuals for KPC-2, KPC-2400, KPC-4 and KAM. Check out applications, hook-ups, etc. before you select a unit **$24.95**

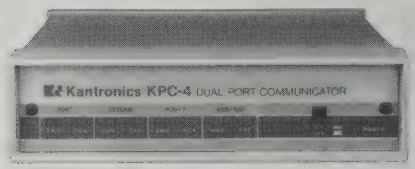
MasterCard VISA DISCOVER AMERICAN EXPRESS

KANTRONICS

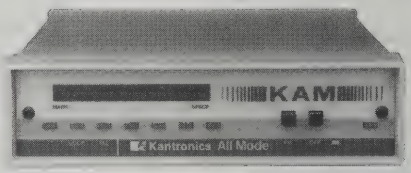


KANTRONICS KPC-2 Packet Communicator • Single port, capable of speeds of 300 to 1200 bps. Software Carrier Detect; Personal Packet Mailbox; Host Mode; WEFAX; Full Duplex; KISS mode; KA-NODE; 32K RAM. RS-232 or TTL compatible for Commodore 64/128. All parameters can be stored in an Eprom. 12V DC. AC adapter, cables and connector for unit included. 1¾"h x 6"w x 8"d, 2¼ lbs **$159.95**

KANTRONICS KPC-3 Packet Communicator • Features similar to KPC-2 in a small, low power package. RS-232. 32K RAM, expandable to 512K. 0.8"h x 5.2"w x 5.2"d.....**$119.95**



KANTRONICS KPC-4 Packet Communicator • Features similar to KPC-2 but speed only 1200 bps or higher. Includes simultaneous dual radio ports which allow gateway operation. 32K RAM, expandable to 64K. 1¾"h x 6"w x 9"d..... **$269.95**



KANTRONICS KAM All Mode Communicator • Features two radio ports, two modems for simultaneous VHF/HF gateway operation. VHF port supports 1200 baud Packet and reception of WEFAX. HF port supports all HF modes. Includes all standard RTTY shifts plus keyboard programmable shift (mark and space tones), and MYAUTOST command for MARS. **Modes:** CW (5-99 wpm with keyboard programmable center frequency and bandwidth), RTTY/ASCII, AMTOR-AMTOR 625, NAVTEX/AMTEX, WEFAX, and KA-NODE. Software Carrier Detect; Personal Packet Mailbox; Host Mode; WEFAX; Full Duplex; KISS mode; KA-NODE; 32K RAM. RS-232 or TTL compatible for Commodore 64/128. All parameters can be stored in an Eprom. 12V DC. AC adapter, cables and connector for unit included. 1¾"h x 6"w x 9"d, 2½ lbs **$289.95**

KANTRONICS Data Engine • Dual port TNC with high speed capability. Standard configuration is AX.25 packet firmware. Modems available with data rates up to 19.2K baud. A second modem may be installed for dual port operation. The G8BPQ Packet Switch firmware is also available (enhanced Net/Rom emulation). Open architecture design including developers manual, V40 processor with 10MHz clock, 64K RAM (expandable to 1/2Mb), EPROM socket supports up to 1/2Mb firmware. RS-232 port supports data rate to 19.2K baud. Hardware HDLC (85C30), lithium battery backed RAM, real time clock. 1¾"h x 6"w x 9"d, 2½ lbs **$289.95**

KANTRONICS KTU Telemetry Unit • Connects to TNC for instant access to weather parameters. Temperature probe with 40 ft. cable included; *optional* wind speed/direcion sensor and rain gauge. 1¾"h x 6"w x 8"d, 2¼ lbs..... **$289.95**

See KANTRONICS Display on pages 60 & 61

Telephone Interconnects

CES

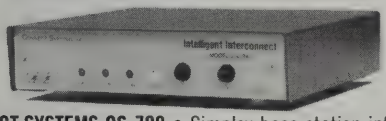
CES SDI-50 • Automatic simplex phone interconnect with VOX-enhanced sampling that gives phone access to handhelds and mobiles. Remotely programmable from any touch telephone. Allows telephone to mobile signaling for selective calling; has automatic CW ID, and will convert base stations to a remote station accessible from any telephone..... **$489.95**

CES SSI-68 (left) • A simplex interconnect for mobile applications. Controlled by DTMF audio from mobiles or telephone. Interface circuitry and software allows for operation with a wide variety of radio and telephone systems. VOX-enhanced sampling for optimum T/R performance **$299.95**

CES 410 Personal Patch • An economy, easy to use basic telephone interconnect. Does not have all of the user programmable features usually found in the higher priced CES telephone interconnects **$189.95**

CONNECT SYSTEMS

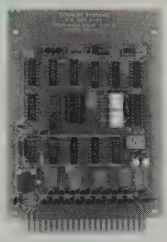
CONNECT SYSTEMS Private Patch V • Multimode interconnect with 4 programmable modes: Sampling Patch (VOX-enhanced), Simplex VOX Patch w/remote, Duplex Patch, and Repeater Controller. Built-in keyboard & menu driven display. Autodialer, re-dial, remote hook-flash, programmable CW ID, toll protect, 1-5 digit connect/disconnect code, secret toll override, telephone remote base, remote control delay .. **$489.95**



CONNECT SYSTEMS CS-700 • Simplex base station interconnect. User-selectable VOX enhanced sampling or VOX controlled sampling. Autodialing, re-dial, regenerated DTMF (or pulse) dialing, auto. busy and dial tone disconnect, programmable CW ID. Built-in keyboard and digital display. All features/modes user selectable/programmable **$299.95**

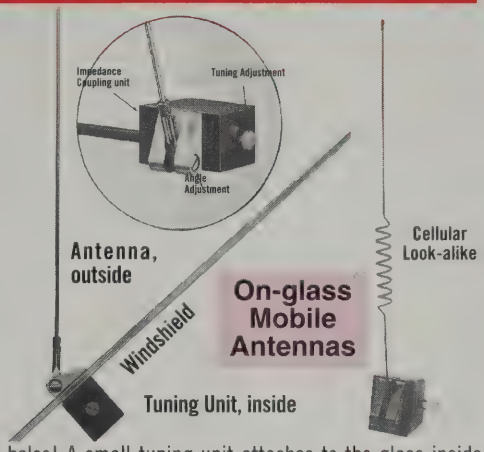
CONNECT SYSTEMS CS-800 • Full or half duplex interconnect + built-in repeater maker. Use to build repeater, add autopatch to existing repeater or use with dual band radios for full duplex mobile phone system. Autodialer, redial, fully regenerated DTMF (or pulse) dialing, automatic busy and dial tone disconnect, user programmable CW ID and more! Built-in programming keyboard with digital readout display make all features/modes user programmable..... **$319.95**

CONNECT SYSTEMS – continued



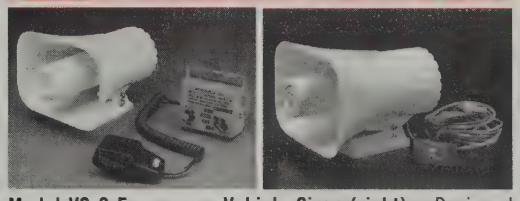
CS-1688 • DTMF Conttroller
Remote control homemade repeaters or autopatches, etc. Provides 16 remotely DTMF controllable open collector outputs suitable for switching relays or interfacing directly with logic, etc. 16 functions are organized into 2 separately programmable groups of 8 functions. Each can be individually set to operate in momentary, latched or exclusive OR (XOR) latched (1 of 8 or 1 of 16). Supplied with mating connector **$149.00**

ANTENNA SPECIALISTS



No holes! A small tuning unit attaches to the glass inside vehicle and couples capacitively thru-the-glass to a 1/2 wavelength antenna element on the outside. Attachment is made with DUOBOND™ adhesive that holds fast but facilitates easy removal without damage. No ground plane, 1/2 wave design. Rated for 100W. Comes with adhesive and 15 ft. coax with PL-259 connector. Regular models for **2m**, **220MHz** and **UHF** bands. Cellular look-alikes for 2m or 440MHz **See Price List**

GROTHE Electronics



Model VS-2 Emergency Vehicle Siren (right) • Designed expressly for the volunteer fireman. Delivers a loud 120Dba (600-1200 Hz) sound level at 4 ft. Comes prewired with 3-position switch (Siren-Off-Yelp), 5" x 7" x 8" super high efficiency horn speaker, 10 ft. cable, mounting bracket and hardware. Requires 12V DC @ 1.5 amps. 2.7 lbs..... **$89.95**

Model VS-3 Volunteer Vehicle P/A & Horn (left) • Public address (P/A) for use in crowd control, at accidents, club events, etc. Powerful 95W output Airhorn Sound with four different sounds really calls attention to your vehicle. Rebroadcast feature allows you to pickup sound from your rig and rebroadcast and monitor through the speaker outside. Includes speaker, microphone, controller 10 ft. cable, mounting bracket and hardware. 12V DC **$129.95**

Model VS-4 P/A Emergency Vehicle Siren (left) • All of the features - P/A, Rebroadcast, Wail, Yelp, Pulse, Airhorn. Volume control of all siren modes. Includes speaker, mic, controller, 10 ft. cable, mounting bracket and hardware. 12V DC..... **$139.95**

ICOM

Repeaters for 144/220/440/1200MHz

Model RP-1520 (2-meters) • Covers 144-148MHz FM with 25W output. Fully synthesized – no retuning after changing frequency. *Features*: User programmable call sign ID; Hang-up and time out timers; Manual transmit; DTMF decoder for remote control operation; Local inhibit function and CTCSS encoder; Excellent IMD attenuation. Sensitivity: <0.5uV for 12 dB SINAD. Built-in speaker and microphone connector. 117V AC or 13.8V DC. 16¾"w x 5¼"h x 14½"d, 37½ lbs..... **$1968.00**

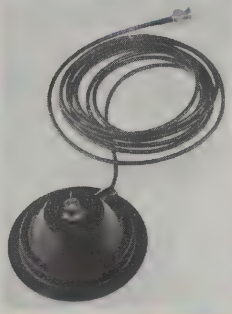
Model RP-2210 (220 MHz) • Features are similar to RP-1520 above. Covers 220 to 225 MHz in 5 kHz tuning step increments with 25W output. CTCSS and hang-up timer are dip-switch programmable. Eprom programming for ID... **$1658.00**

Model RP-4020 (440 MHz) • Similar to RP-1520/2210 except for appearance. Covers 430 to 450 MHz with 25 output.The DTMF code includes a 4-digit password to prevent undesired remote control access **$1998.00**

Model RP-1220 (1.2 GHz) • Similar to ICOM repeaters above. Synthesized, covers 1240 to 1300 MHz with 10W (high) or 1W (low) output. Battery back-up connector. Most functions can be remotely controlled using DTMF codes **$2198.00**

RF Products

Handy magnetic HT antenna mount



Improve HT performance when mobiling. Simply attach your VHF or UHF rubber duck to this handy magnetic mount and place it outside on the roof or trunk. Provides constant vertical polarization and eliminates losses associated with being inside of a metal compartment.

199-416 • With 10 ft. coax and BNC connectors **$17.95**

199-495 • With 13 ft. coax and SO-239 connectors.....**$23.95**

JABRO

Replacement Batteries

Rechargeable nickel cadmium batteries and inserts available for ICOM Handhelds. • See Price List under **NICAD BATTERIES**.

MasterCard VISA DISCOVER Use your CREDIT CARD AMERICAN EXPRESS

STORE HOURS: **Mon. thru Fri. 9-5:30; Sat. 9-3**

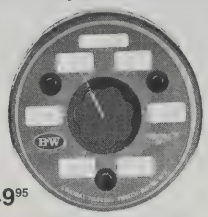
AES® Store Locations	Phone	Toll Free	FAX
Milwaukee, WI 53223; 5710 W. Good Hope Road	(414) 358-0333	1-800-558-0411	(414) 358-3337
Wickliffe, OH 44092; 28940 Euclid Avenue	(216) 585-7388	1-800-321-3594	(216) 585-1024
Orlando, FL 32803; 621 Commonwealth Avenue	(407) 894-3238	1-800-327-1917	(407) 894-7553
Clearwater, FL 34625; 1898 Drew Street	(813) 461-4267		(813) 443-7893
Las Vegas, NV 89106; 1072 N. Rancho Drive	(702) 647-3114	1-800-634-6227	(702) 647-3412

Watch for Future AES® Branch Store Openings!

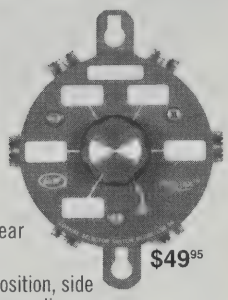
B & W - accessories

Coaxial Switches, etc.

• 52/75Ω • 2KW SSB • Negligible insertion loss • VSWR less than 1.2:1 up to 150 MHz • Crosstalk at 30 MHz -45 dB between adjacent outlets, -60dB between alternate outlets



$49.95

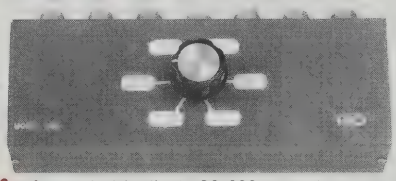


$49.95

CSA-6G (left) • 6-position, rear SO-239 connectors, grounding

CSR-5G (right) • 5 position, side SO-239 connectors, grounding.

$49.95



CS-6G • 6-pos. desk/wall mt., SO-239 connectors, grounding.

$39.95

$39.95

CS-3G • 3 pos. desk/wall mt., SO-239 connectors, grounding.

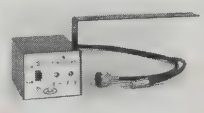
CR-115 COAXIAL RELAY

For switching antennas from transmit to receive, receiver terminal grounds when in transmit. Rated at 1KW CW, good to 150MHz. Requires 48 to 130V AC for control.

B&W LOW PASS FILTERS

Eliminate Television and Radio interference due to transmitter harmonic content. Available for HF (1.5-30 MHz), or 6-meter band – 100 or 1000W rating. Sharp cutoff, high attenuation of undesired harmonics with <0.3 db insertion loss.

FL-10/100 • for 1.5-30 MHz, 100W, 52 Ω **$32.75**
FL-10/1500 • for 1.5-30 MHz,1000W, 52Ω..... **41.50**
FL-10/1500/70 • for 1.5-30 MHz, 100W 72Ω.... **49.95**
FL-6/100 • for 6-meters, 100W, 52Ω..... **38.50**
FL-6/1500 • for 6-meters, 1000W, 52Ω..... **55.00**



B&W VS-300A Antenna Tuner (left) • Covers 1.8 to 30MHz, rated for 300W RF input. Matches coaxial cable, balanced line or single wire antenna. Built-in antenna switch selects one of two coax fed antennas, wire antenna or bypass. 4:1 balun and meter with 300W forward and 30W reflected scales **$99.95**

AT-200 2m Mobile Antenna Matcher (right) • Allows use of vehicle AM/FM antenna 25W 2m operation. Front panel switch selects rig – tune/load adjustments with LED indicator adjust VSWR to <1.2:1. Input for car antenna, coaxial cable outputs to car radio and transceiver. 2 5/16"w x 2 3/16"w x 3¼"d..... **$39.95**

MasterCard VISA DISCOVER AMERICAN EXPRESS

Important Dates . . .
YAESU DAY
January 9th – Las Vegas store
KENWOOD DAY
January 16th – Orlando store

Antennas

B&W AT-110 Preassembled 5-Band trap dipole • for 10, 15, 20, 40 & 80M, 2 KW PEP, 110 ft. long. Low VSWR on 80 and 40 meters; somewhat higher on 10 15 and 20 – typically 2:1 to 3:1. Wire length adjustments provided for tuning..... **$84.95**

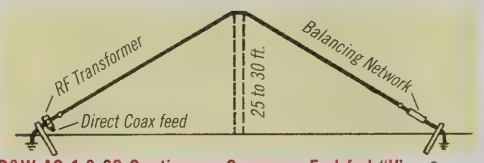
AT-110K • Kit version of AT-110 – #14 stranded copperweld wire, center connector, traps, end insulators **$72.95**

AT-55 Preassembled 4-Band trap dipole • for 10, 15, 20, 40M, rated at 2KW PEP, 55 ft. long..... **$74.95**

AT-55K • Kit version of AT-55 – #14 copperweld wire, center connector, traps, end insulators and instructions..... **$64.95**

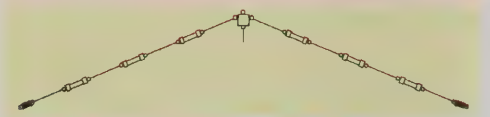
B&W AC 3.5-30 Broadband Folded Dipole • Preassembled and pretuned, with balun. Covers 3.5-30MHz continuous with VSWR <2:1, rated 2KW PEP, 90 ft. long. 50Ω input. Install as a horizontal flattop, inverted-V, or sloper for DX..... **$179.95**

B&W BWD 1.8-30 • Same as AC 3.5-30 but covers 1.8-30MHz continuous. Rated at 2KW PEP, 90 ft. long **$179.95**



B&W AC 1.8-30 Continuous Coverage End-fed "V" • Covers 1.8-30 MHz with VSWR <2:1, rated 2KW PEP. Requires only 80 ft. of horizontal space, or when space is limited, can be shorted further with only a slight loss of efficiency.....**$179.95**

B&W Antennas for Limited Space



B&W AS-160 • 160/80/40/20 meter Dipole or V • At 137 ft. long, is only about half-the-length of a full-sized 160meter dipole, yet due to its design, it is an efficient radiator. It also gives excellent full-size performance on 80, 40 and 20 meters as well. Three sets of traps isolate a half-wave on each band. When using "no-tune-up" transceivers for 160M operation, an antenna tuner is recommended to provide a better match for greater power transfer and bandwidth. Direct feed for 52Ω coax with SO-239 connector. 500 watts PEP.....**$139.95**

AS-80 80/40/20 meter Dipole or Inverted V • Similar in construction to the AS-160 above, except only two sets of traps. Where installation space is at a premium, this antenna can provide excellent coverage of 80 meters with a shortened overall length of only 78 ft. Operates with low SWR on all three bands. Rated at 500 watts PEP **$109.95**

AS-40 • 40/20/25/10 meter Dipole or Inverted V • Two sets of traps, rated at 500W PEP. Overall length is 40 ft **$139.95**

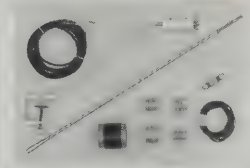
AS-20 20/15/10 meter Dipole or Inverted V • Two sets of traps rated at 500W PEP. Overall length is 23 ft **$109.95**

B&W Antennas for Very Limited Space

AXS-160 160/30 meter Dipole or Inverted V • One set of traps, rated at 500W PEP. Overall length is 96 ft.....**$109.95**

AXS-80 80/40/15 meter Dipole or Inverted V • Two sets of traps, rated at 500W PEP. Overall length is 64 ft **$109.95**

B&W AP-10 Portable antenna



Only 57" fully extended. Convenient for limited space in apartments, travel, etc. Simply change coils for 2, 6, 10, 15, 18, 20, 30, or 40 meters. Handles 300W PEP. Mounting bracket, all coils, 10 ft. of coax and counterpoise wire **$69.95**

ICOM AIRCRAFT

IC-A21 NAVICOM PLUS VHF AIR BAND HANDHELD

COMM features: Single knob tuning, direct access tuning of all frequencies and memories, 760 channels, 10 WX channels, 20 memory channels. Programmed scan, memory scan and lock out functions. 5W (PEP) power output. Instant 121.5MHz emergency frequency recall

NAV Features: 200 channels, VOR nav with CDI, displays radial heading to or from VOR station - instant position fix. Auto bearing set system corrects course deviation. Semi-duplex operation for combined VOR/COM operation.

Extra-large lighted keyboard for night operation. 2.6"w x 7.8"h x 1.4"d, 1.4 lbs. **$529.95**

SONY

IPS-360 PYXIS • GPS Receiver. Quick all-weather back-up to navigation systems. Self contained power supply & illuminated display. Provides all basic GPS functions: Bearing, Speed; Coordinates; Altitude;Time; Position. 100 waypoints, 3D navigation. Includes cigarette lighter adapter and antenna with cable..... **$799.95**

NAVAL Audio Booster Speaker

NAVAL HTS-2 • Improvesweak audio from your HT or Walkman, etc. A 10dB audio amplifier and efficient 3.5 in. oval speaker to gives a powerful base station sound. Special battery saver circuit shuts off the audio amplifier automatically, reducing battery drain to less than 1 ma. if your HT is squelched for more than 10 seconds. Amplifier turns on the instant the channel becomes active.DC power jack and voltage regulator allows use of external 5-15VDC Has internal battery compartment for 4-AA cells (not supplied) and built-in NiCad charger. Comes with 5 ft. audio cord with plug and stereo to mono converter. 2¾" x 4½" x 2½", 1 lb. Silver/Grey color **$29.95**

SYNTHETIC TEXTILES, Inc.

Black DACRON® Double Braided Antenna Rope

Designed to fit the needs of the Ham Operator. A better choice than regular galvanized guy wire that can eventually rust and have to be replaced. Dacron®/polyester does not weaken with mildew and provides excellent resistance to aging and abrasion Non-resonant. Cuts neatly with a hot knife and unties easily after years of use. Available in 3/32" and 3/16" diameter. with break strengths of 260+ & 770+ lbs, respectively .....**See GAP in Price list**

Simple Operation
Advanced Technology

ALINCO

New! DJ-180T 2m FM Handheld

Within Budget - Without Compromise

Just when you thought great audio and tough as nails construction were luxury features available only on the most expensive models, and just when you thought simple, intuitive operation was a thing of the past, along comes the Alinco VHF-FM HT, DJ -180T.

A different offset can be stored in each memory channel, and most other functions can also be stored independently in each memory channel. CTCSS encode and decode comes standard. As most QSO's on 2- meter are done through repeaters, these special features make the DJ-180T the most practical HT to own. Alinco has once again combined high-technology with low-cost.

Check out the affordable technology of the 90's. Check out ALINCO.

Also Available
DJ-580T Dual Bander

Incredibly Tough !

Photo for Demonstration only- Abuse to the transceiver will void the warranty.

- Receive 130.0- 173.9 MHz
- CTCSS encode/decode built-in
- 2 watts standard, 5 watts with optional EBP- 28N battery pack
- High/Low power selection
- Selectable frequency step for quick QSY
- Standard DTMF keyboard
- Low battery indicator
- "Busy" channel LCD indicator
- Key Lock/ PTT Lock functions
- Auto Power Off
- Instant QSY to Call channel
- Monitor button
- Scan Modes
- Battery Saver design
- Supplied with Ni-Cd battery pack EBP-26N for 2 watts output, wall charger, belthook, and strap.
- Optional accessories: EBP'28N Battery pack for 5 watts output, EDH-11 Drycell case, EDC-45 Quick charger, EMS-9 Speaker-microphone, EME-12/13 Headset with VOX/PTT, EME-15 Tie-pin microphone, EDH-12 DC Jack adaptor .EBC-6 Mobile bracket, ESC-18/19 Soft case, EJ-14U 50ch Memory unit, EJ-15U 200ch Memory unit.

ALINCO ELECTRONICS INC.

ALINCO ELECTRONICS INC.
438 Amapola Avenue, Unit 130, Torrance, CA 90501
Tel. (310) 618-8616 Fax (310) 618-8758
Specification and features are subject to change without notice or obligation.

YOU ASKED FOR IT...YOU GOT IT!

The **ALINCO DR-1200T** is a Data Radio covering 144-148MHz with 25 watts of power, excellent sensitivity and True FM. Ideal for data exchange and designed with Packet Radio in mind. It has an out-of-the-box 2400 baud rate, and the ability to run all day. Provides optimum audio characteristics for the mark and space tones of 1200 and 2200Hz so both the transmit and receive circuits can be utilized with both 1200 and 2400 bps, also convertable to 9600 bps. With the optional microphone the DR-1200T also works great for voice.

The ALINCO DR-1200T Data Radio

Features: LCD display; CTCSS encode/decode; 14 memory channels; Call channel, Multi-function scanning capability and Repeater operation including odd offsets. Includes TNC interface and DC power cables. Microphone and mobile mounting bracket are optional. Requires 13.8VDC @ 5.5A. • 5½"w x 2"d x 6¾" d, 2¼ lbs.

Two Year Limited Warranty!

ALINCO ELECTRONICS INC.

High-Power Version DJ-F1TH Available Now.
5 watts out of the box.

Model DJ-F1T — 2m Compact HT

This is truly the best 2-Meter HT you'll find on the market. It is the smallest one with all the latest useful functions.The tiny DJ-FIT is a powerful communication station covering 144-148MHz (tx) with a wide band receive from 138-174 MHz, and with a simple modification - 118-136 MHz, which includes the aircraft band. Output is 2 watts with standard battery and 5 watts with optional battery, 13.8V DC or the High Power version DJ-F1TH. This "bullet-proof" HT is really durable. The aluminum frame and tough Poly-Plastic case can take the kind of abuse that destroys lesser radios. The innovative Ni-Cd battery pack locks conveniently to the back of the HT, and comes with drop-in charging stand. The quality speaker produces **unbelievably great sound!**. Full-size illuminated keypad for easy operation and programming. Standard features include Dial or Keypad direct frequency entry; 40 memory channels; DSQ for paging; CTCSS encode; 3 power levels; Multi-function scan, APO, Autodialer; Reverse; Beeper On/Off, & more!. 4 15/16 "h x 2 1/8 "w x 1 1/2 "d, 13 oz. **Two Year Limited Warranty!**

Order Toll Free: 1-800-558-0411 ***FAX: (414) 358-3337***

AMATEUR ELECTRONIC SUPPLY® Inc.

5710 W. Good Hope Road; Milwaukee, WI 53223 • Phone (414) 358-0333

AES® BRANCH STORES

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Watch for Future AES® Branch Store Openings!

KENWOOD

Savor the Thrill of the Chase with Kenwood's New TS-950SDX

Like a cheetah in pursuit of game, Kenwood's newest HF transceiver blends intense efficiency with swift, surgical precision. State of the art, pure and simple. Offering superb TX/RX performance plus exceptional signal purity, the TS-950SDX establishes a new benchmark for HF communications.

- **Built-in DSP (digital signal processor)**
- **Dedicated Power MOS FET final section**
- **User-friendly design and menu system**

Kenwood meets or exceeds all specifications. Contact your dealer for a complete listing of specifications and accessories. Specifications are subject to change without notice. Complete service manuals are available for all Kenwood transceivers and most accessories. One year warranty in the U.S.A. only.

State of the art, pure and simple. Offering superb TX/RX performance plus exceptional signal purity, the TS-950SDX establishes a new benchmark for HF communications.

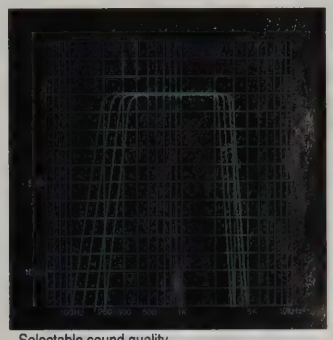
- Built-in DSP (digital signal processor)
- Dedicated Power MOS FET final section
- User-friendly design and menu system

TS-950SDX HF TRANSCEIVER

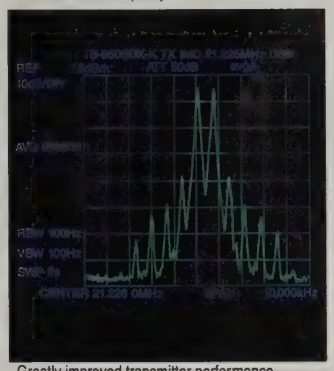
Unleash the Full Potential of Kenwood's New TS-950SDX

Digital signal processing is the key to accuracy and reliability – a quantum leap in transceiver performance. And it's one of the reasons why Kenwood's TS-950SDX is setting the pace for HF communications. Inside the TS-950SDX, a DSP replaces conventional analog devices for processing the TX signal in the SSB, CW, AM, and FSK modes. Additionally, PSN (phase shift network) modulation assures a wide frequency response.

In the CW mode, the DSP detects the leading edge (key down) and trailing edge (key up) of the keying signal, refers to the internal Gaussian characteristic ROM, and obtains shaped CW output devoid of key clicks.



Selectable sound quality



Greatly improved transmitter performance

Reception is also enhanced by use of the DSP: digital PSN detection and digital audio filtering help to eliminate interference and improve sound quality, reducing distortion to a minimum.

The TS-950SDX also ranks as the first Amateur Radio transceiver to feature an FET final section. The unparalleled linearity of this design results in greatly improved TX performance. Reliability is equally impressive, thanks to its heavy-duty construction. When it comes to HF, the choice is simple. Savor the thrill of the chase with Kenwood's TS-950SDX.

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AMATEUR ELECTRONIC SUPPLY® Inc.

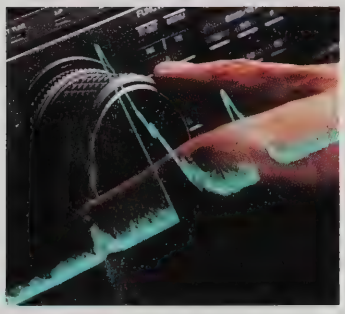
5710 W. Good Hope Road; Milwaukee, WI 53223 • Phone (414) 358-0333

State of the art, pure and simple. Offering superb TX/RX performance plus exceptional signal purity, the TS-950SDX establishes a new benchmark for HF communications.

- Built-in DSP (digital signal processor)
- Dedicated Power MOS FET final section
- User-friendly design and menu system

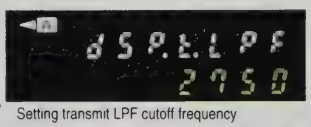
TS-950SDX HF TRANSCEIVER

Enjoy Total Control with Kenwood's New TS-950SDX

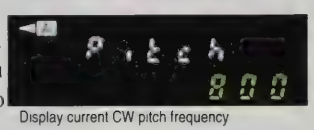


A competition-class transceiver only attains its real potential when powerful performance is balanced by user-friendly controls. Operating ease is fundamental. And it's one of the reasons why Kenwood's TS-950SDX is setting the pace for HF communications.

The design of the TS-950SDX represents a two-track approach to controls and displays: while providing a comprehensive menu system, there are also numerous time-saving functions — such as Quick Memory, direct band access keys and a remote function keypad.



Setting transmit LPF cutoff frequency



Display current CW pitch frequency

The menu system provides rapid front-panel access to a wide variety of features and operational modes. But there's no better way to appreciate this phenomenal rig than by operating split frequencies. The front panel controls include M/S select and an RX↔SUB key for instantly swapping frequencies. With an external speaker or headphones, the main and sub receivers can be monitored simultaneously yet independently. Monaural and semi-mixed monitoring are also available.

Among the many other convenient features of the TS-950SDX are ΔF (enabling instant verification of frequency difference), a CW filter (500Hz) for sub-receiver use, and dual S meters.

When it comes to HF, the choice is simple. Savor the thrill of the chase with Kenwood's TS-950SDX.

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FM HANDHELD TRANSCEIVERS

TH-78A

- 144MHz/440MHz dual-band operation, with 118—173.995MHz & 438—449.995MHz receiver
- Dual-frequency receive capability (VHF + UHF, VHF + VHF & UHF + UHF)
- Alphanumeric memory & alphanumeric message paging
- 50 multi-function memory channels (non-volatile)
- Double-band scan

TH-48A

- 440MHz single-band transmission and dual-band receive capability (144MHz/440MHz)
- Alphanumeric memory
- Alphanumeric message paging
- 40 multi-function memory channels (non-volatile)
- Tone alert system with time indicator

TH-225A

- 144MHz single-band operation, with 141-163MHz receiver coverage
- Max. 6 watts RF output with external DC power supply (7.2-16V)
- Memory scan with programmable memory channel lock-out
- Time-operated, carrier-operated, & seek-operated scan stop modes
- 10 memory channels

TH-28A

- 144MHz single-band transmission and dual-band receive capability (144MHz/440MHz)
- Alphanumeric memory
- Alphanumeric message paging
- 40 multi-function memory channels (non-volatile)
- Tone alert system with time indicator

TH-46AT

- 440MHz single-band operation
- Max. 5 watts RF output with PB-8 battery (opt.) or 13.8V DC
- 20 multi-function memory channels plus 1 call channel
- DTMF memory function for auto-dial, autopatch
- DC direct-in

TH-315A

- 220MHz single-band operation, with 215-230MHz receiver coverage
- Max. 5 watts RF output with PB-1 NiCd battery pack (opt.)
- Memory scan with programmable memory channel lock-out
- Time-operated, carrier-operated, & seek-operated scan stop modes
- 10 memory channels

FM Handheld Transceivers

	TH-78A	TH-28A	TH-48A
Frequency Range*	VHF RX 118 - 173 995 MHz TX 144 147 995 MHz UHF 438 449 995 MHz	RX 118 173 995 MHz (main) 438 449 995 MHz (sub) TX 144 147 995 MHz	RX 438 449 995 MHz (main) 136 173 995 MHz (sub) TX 438 449 995 MHz
Mode	F3E (FM)	F3E (FM)	F3E (FM)
RF Output Power	VHF HI = 5W (with PB 17) 2 5W (with PB 13 18) LO = 0 5W EL = 0 02W UHF HI = 5W (with PB 17) 2W (with PB 13 18) LO = 0 5W EL = 0 01W	HI - 5W (with PB 17) 2 5W (with PB 13 18) LO - 0 5W EL 0 02W	HI = 5W (with PB 17) 2W (with PB 13 18) LO - 0 5W EL 0 02W
Selectivity	More than 12 kHz (−6 dB) Less than 28 kHz (−40 dB)	More than 12 kHz (−6 dB) Less than 28 kHz (−40 dB)	More than 12 kHz (−6 dB) Less than 28 kHz (−40 dB)
Sensitivity	VHF Less than 0 16μV (main) Less than 0 32μV (sub) UHF Less than 0 18μV (main) Less than 0 32μV (sub)	Less than 0 16μV (main) Less than 0 32μV (sub)	Less than 0 18μV (main) Less than 0 32μV (sub)
Dimensions mm (inch) (Projections not included)	49 5(1 95)W × 134(5 28)H × 41(1 61)D mm (inch)	49 5(1 95)W × 115 8(4 56)H × 37 8(1 49)D mm (inch)	49 5(1 95)W × 115 8(4 56)H × 37 8(1 49)D mm (inch)

	TH-46AT	TH-225A	TH-315A
Frequency Range*	438 450 MHz	RX 141 000 - 162 995 MHz TX 144 000 147 995 MHz	RX 215 000 229 995 MHz TX 220 000 224 995 MHz
Mode	F3E (FM)	F3E (FM)	F3E (FM)
RF Output Power	HI = 5W (with PB 8) 2 0W (with PB 5 6 7 9 10) LO = 0 5W approx EL = 0 02W approx	HI = 6W (13 8V DC) 5W (with PB 12 or PB 1) 2 5W (with PB 2) LO = 0 5W approx	HI = 5W (with PB 1) 2 5W (with PB 2) 1 5W (with PB 3 4) LO = 0 5W approx
Selectivity	More than 12 kHz (−6 dB) Less than 28 kHz (−40 dB)	More than 12 kHz (−6 dB) Less than 24 kHz (−40 dB)	More than 12 kHz (−6 dB) Less than 24 kHz (−40 dB)
Sensitivity	12 dB SINAD less than 0 18μV	12 dB SINAD less than 0 2μV	12 dB SINAD less than 0 2μV
Dimensions mm (inch) (Projections not included)	58 0(2 28)W × 135 5(5 33)H × 29 5(1 16)D mm (inch)	67 0(2 64)W × 190 0(6 81)H × 37 0(1 46)D mm (inch)	67 0(2 64)W × 173 0(6 81)H × 37 0(1 46)D mm (inch)

*Specifications are guaranteed for Amateur band only

HF TRANSCEIVER

TS-850S

For Global Reach: Kenwood's Competition-Class TS-850S

A rewarding experience. Kenwood's renowned digital technology endows the TS-850S HF transceiver with specs that put it firmly in the top ranks of Amateur Radio equipment. Features include a preprogrammed automatic antenna tuner (built-in or optional), Kenwood's Advanced Intercept Point system for enhanced dynamic range, 100 memory channels with three scan modes, a Direct Digital Synthesizer (DDS) and digital PLL system to permit ultra-fine (1Hz) tuning, plus an optional digital signal processor — the DSP-100. Impressive credentials, but the TS-850S also offers reassuring operating ease.

160m to 10m amateur band operation with 100kHz to 30MHz general coverage receiver

Kenwood's AIP system for clearer reception

AIP (Advanced Intercept Point) is an exclusive circuit design that provides superior dynamic range. The use of two selective RF amplifiers — one with large gain for enhanced sensitivity, the other with small gain for better intermodulation characteristics - results in a significantly reduced noise floor level.

Automatic antenna tuner (built-in or optional)

For operator convenience, the TS-850S can be supplied with a completely automatic antenna tuner covering all amateur bands from 160 through 10 meters. This is factory-installed or ordered separately as an option. The microprocessor that controls the tuner has been preprogrammed to assure minimum SWR.

Optional digital signal processor

For greater signal purity, the TS-850S can be equipped with the optional DSP-100 digital signal processor. Among the many benefits of converting the signal into a digital waveform are increased suppression of unwanted sidebands during SSB operation and improved CW operation.

Ultra-fine (1Hz) tuning

The TS-850S uses a microprocessor-controlled Direct Digital Synthesizer (DDS) and digital PLL system to control the frequency in 1Hz steps.

Heavy duty cycle design

A large, die-cast aluminum heat sink and high-efficiency cooling fan help to assure increased reliability — especially important for digital mode operation.

Outstanding receiver performance

- **High sensitivity**

Special circuits automatically boost signal reception in the 24.5 to 30MHz range.

- **Selectable IF filter with memory**

To suit mode, band and QRM conditions, the optimum filter bandwidth can be selected using the front-panel 8.83MHz and 455kHz filter keys.

Superior interference reduction

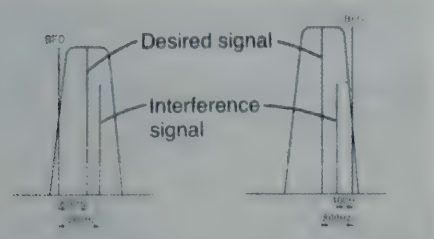
- **IF slope tuning (for SSB, CW and FSK modes)**

The low- and high-frequency slopes of the IF passband can be adjusted independently to obtain maximum signal intelligence.

• **Tunable IF notch filter**
For all modes except FM, this enables highly selective filtering of an interfering signal with approximately 40dB of attenuation
• **Dual-mode noise blanker ("pulse" & "woodpecker") with level control**

Dependable CW operating features

• **Variable pitch control and reverse mode**
Variable pitch control shifts the 4th IF passband in the demodulator circuit while raising or lowering the pitch of the audible beat frequency. In reverse mode the pitch of interference competing with the CW signal is reversed, so the operator can approach the target from either side.



CW mode (USB) CW reverse mode (LSB)

• **Full break-in and semi break-in**
• **High-performance electronic keyer circuit**
The electronic keyer circuit has dynamic dot and dash memories controlled by a microprocessor. A weighting control allows tailoring of the CW waveform.

Superb split-frequency performance

• **Split-frequency operation even on memory channels**
• **TF-SET (transmit frequency set)**
When the TF-SET key is depressed, the main dial can be used to adjust the transmit frequency without affecting the receive frequency

100 memory channels

There are 90 memory channels for independent storing of transmit and receive parameters — such as frequency, mode, filter setting, AIP data and tone frequency. An additional 10 channels are used to establish the upper and lower limits for the programmable band marker.

Easy-to-operate scan functions

All 100 memory channels are available for scanning. Programmable memory channel lock-out allows selected channels to be skipped during scan without data loss. Other features include group scan, programmable band scan (within the limits specified by the programmable band marker), and variable scan speed (using the RIT/XIT control knob).

Digital recording systems

The TS-850S offers CW and voice digital recording systems with remote control capability. Up to 50 characters can be stored in each of the 3 built-in CW memories, while an optional digital recording unit (DRU-2) allows transmission voice recording using 3 audio memories — 2 of 8 seconds, one of 16 seconds — for SSB, FM and AM calling

All-mode RF output power control

RIT/XIT control (10Hz steps)

Adjustable transmit monitor circuit (SSB, AM and FSK modes)

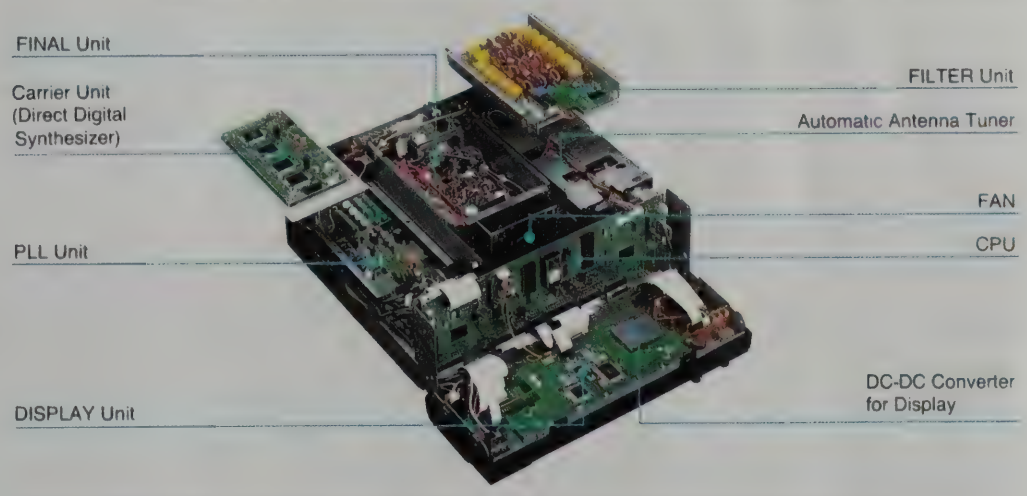
Large, multi-function LCD display and digital bar meter

Data transfer capability for master/slave applications

RF type speech processor

High-frequency TX boost function

4-step (0, 6, 12 or 18dB) RF attenuator



Meet **Peter Sargent WA6EDT** our new Las Vegas technician! Peter comes to us from KENWOOD where he spent 13 years working primarily on HF radios. Peter also does sales work so if you want to get a KENWOOD, or have one repaired, ask for him.

HF TRANSCEIVER

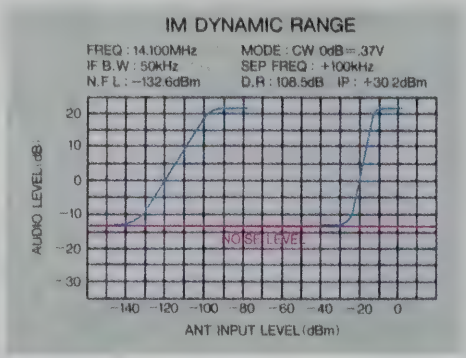
TS-450S/690S

For the New Challenge: Kenwood's High-Performance TS-450S/690S

Kenwood's formidable TS-450S/690S can star in virtually any role with its 100W transmission capabilities on all nine amateur bands — in SSB, CW, AM, FM and FSK modes. Compact, lightweight construction makes this HF transceiver particularly suited for DX-peditions. Rugged reliability is matched with leading-edge electronics: automatic antenna tuner (built-in or option), Kenwood's AIP system for improved dynamic range, Direct Digital Synthesizer for fine (1Hz) tuning, and the optional DSP-100 digital signal processor. In addition, the TS-690S model is equipped with a separate antenna connector and 50W output power for operations in the 50MHz band.

160m to 10m amateur band operation with 500kHz to 30MHz general coverage receiver (TS-450S/690S), additional 6m amateur band operation with 50MHz to 54MHz coverage (TS-690S)

AIP system for clearer reception
AIP (Advanced Intercept Point) is a Kenwood-exclusive circuit design that improves the receiver's intermodulation dynamic range to 108dB. Two RF amplifiers — one with large gain for enhanced sensitivity, the other with small gain for better intermodulation characteristics — assure greatly reduced noise floor level.



Automatic antenna tuner (built-in for TS-450SAT)
The AT version of the TS-450S features a built-in antenna tuner with microprocessor control that automatically establishes the optimum antenna match between 20 and 150 ohms in the 80 through 10 meter band. A warning beep sounds if a match cannot be found. (For the TS-450S and TS-690S, this tuner is optional.)

Optional digital signal processor (DSP-100)
The DSP-100 digitally processes both incoming and outgoing signals for maximum intelligibility with minimum bandwidth. In SSB operation, unwanted sidebands can be effectively suppressed, while in CW mode the rise and decay times of CW waveforms can be tailored for optimum clarity.

Ultra-fine tuning (SSB, CW and FSK modes)
Thanks to the Direct Digital Synthesizer (DDS), the operator can fine-tune in 1Hz steps — particularly useful for HF packet and AMTOR data communications.

User-friendly Primary function
Beginners and mobile operators will welcome the Primary function, which deactivates all but the most frequently used controls to prevent operational errors.

Heavy duty cycle design
High-reliability components and a sophisticated cooling system assure circuit stability and make the TS-450S/690S sufficiently rugged for heavy duty cycle use.

Superior receiver performance and sensitivity

- **Triple conversion**

Special circuit design, including triple conversion, enhances sensitivity above 24.5MHz without affecting two-signal characteristics. This means better results when DXing and QSOing on the 24 to 30MHz band (24 to 50MHz with the TS-690S).

• **Selectable IF filter with memory**
The operator can choose the ideal IF bandwidth depending on mode, band and QRM conditions. The setting can be stored in memory for later recall.

First-class interference reduction

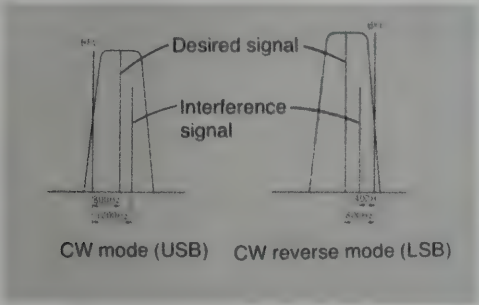
• **IF shift function**
This moves the IF passband away from interfering signals while maintaining focus on the target signal, thus maximizing gain and signal-to-noise ratio.

• **AF notch filter**
A tunable AF notch filter with sharp cutoff characteristics minimizes undesired audio frequencies with surgical-strike precision.

• **Dual-mode noise blanker**
NB-1 eliminates short duration pulse-type interference such as ignition noise, while NB-2 rejects longer duty cycle noise, such as "Russian woodpecker" interference.

High-caliber CW operations

• **Reverse mode**
In reverse mode reception is moved away from an interfering signal, so the operator can tune in the target signal from above or below.



• **Pitch control**
Dedicated CW operators will love this feature which permits the CW pitch to be varied in 50Hz steps, from 400 to 800Hz.

Impressive split-frequency operations

• **TF-SET and ΔF keys**
Split-frequency operations are greatly facilitated by the TF-SET (transmit frequency set) key, which can be programmed with the ΔF key so that the frequency difference is indicated on the numeric display.

100 memory channels with multi-scan functions

There are 100 memory channels — all battery-backed and non-volatile — for storing transmit and receive parameters such as frequency, mode, filter setting, AIP on/off. Of these, the upper 10 memory channels can also be used to hold both limits for the programmable band scan, programmable VFO and store mode, and related data.

Three different scan modes

The operator can scan any or all 100 memory channels, skipping selected channels with a lock-out feature. Group scan divides the 100 channels into 10 groups of 10 for separate scanning. And programmable band scan automatically covers from channel 90 through 99 within the predetermined band limits.

Simple data transfer between two transceivers

If two Kenwood transceivers are hooked up for dual-receive or master/slave operations, data can be transferred automatically via a special cable.

Digital bar meter and multi-function display

All-mode squelch circuit

All-mode RF output power control

Switchable AGC circuit (SLOW/FAST)

Direct frequency entry via numeric keypad

TS-690S

DSP-100

MC-60A SP-23 TS-450SAT PS-53

Order Toll Free: 1-800-558-0411 **FAX: (414) 358-3337**

AMATEUR ELECTRONIC SUPPLY® Inc

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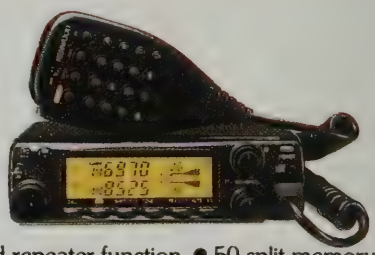
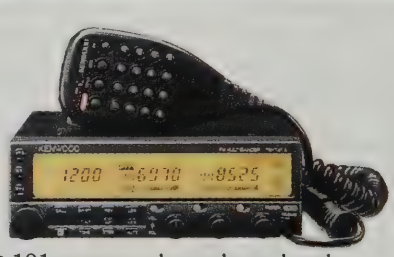
FM MOBILE TRANSCEIVERS

TM-732A



• 144MHz/440MHz dual-band operation • Dual receive on same band (VHF + VHF or UHF + UHF) with one antenna • Improved cross band repeater function • 50 split memory channels with multi-scan functions • Detachable front panel for remote control

TM-741A



• 144MHz/440MHz dual-band operation • 28MHz, 50MHz, 220MHz, & 1200MHz FM units (opt.) for tri-band operation • Dual/triple receive • 101 memory channels per band • Detachable front panel for remote control

TM-631A

• 144MHz/220MHz dual-band operation • Dual-channel watch • Cross band repeater function • 30 memory channels with multi-scan functions • Separate speaker terminals & squelch

TM-641A

• 144MHz/220MHz dual-band operation • 28MHz, 50MHz, 440MHz, & 1200MHz FM units (opt.) for tri-band operation • Dual/triple receive • 101 memory channels per band • Detachable front panel for remote control

TM-541A

• 1200MHz single-band operation • Max. 10 watts RF output • 20 multi-function memory channels plus call channel • Multi-scan capability • Automatic lock tuning (ALT) function

FM Mobile Transceivers

	TM-741A	TM-641A	TM-732A	TM-631A
Frequency Range*	144 MHz: TX 144—148 MHz RX 118—174 MHz 440 MHz: 438—450 MHz	144 MHz: TX 144—148 MHz RX 118—174 MHz 220 MHz: TX 220—225 MHz RX 215—235 MHz	144 MHz: TX 144—148 MHz RX 118—174 MHz 438—450 MHz 440 MHz: TX 438—450 MHz RX 438—450 MHz 136—174 MHz	144 MHz: TX 144—148 MHz RX 136—174 MHz 220 MHz: TX 220—225 MHz RX 215—230 MHz
Mode	F3E (FM)	F3E (FM)	F3E (FM) [A3E (AM) RX 118— 136 MHz]	F3E (FM)
RF Output Power	144 MHz: HI = 50W MID = 10W LO = 5W approx. 440 MHz: HI = 35W MID = 10W LO = 5W approx.	144 MHz: HI = 50W MID = 10W LO = 5W approx. 220 MHz: HI = 25W MID = 10W LO = 5W approx.	144 MHz: HI = 50W MID = 10W LO = 5W approx. 440 MHz: HI = 35W MID = 10W LO = 5W approx	144 MHz: HI = 50W LO = 5W approx. 220 MHz: HI = 25W LO = 5W approx.
Selectivity	144 MHz/440 MHz: More than 12 kHz (−6 dB) Less than 24 kHz (−60 dB)	144 MHz/220 MHz: Less than 12 kHz (−6 dB) Less than 24 kHz (−60 dB)	144 MHz/440 MHz Less than 12 kHz (−6 dB) Less than 24 kHz (−60 dB)	144 MHz/220 MHz: More than 12 kHz (−6 dB) Less than 24 kHz (−60 dB)
Sensitivity	12 dB SINAD less than 0.16μV	12 dB SINAD less than 0 16μV	12 dB SINAD less than 0.16μV	12 dB SINAD less than 0 16μV
Dimensions mm (inch) (Projections not included)	150(5 91)W × 50(1 97)H × 175(6 89)D mm (inch)	150(5.91)W × 50(1.97)H × 175(6.89)D mm (inch)	140(5 52)W × 40(1.58)H × 160(6.30)D mm (inch)	150(5.91)W × 50(1 97)H × 205(8 07)D mm (inch)

	TM-541A	TM-441A	TM-241A	TM-331A
Frequency Range*	1200 MHz: 1240—1300 MHz	440 MHz: 438—450 MHz	144 MHz: TX 144—148 MHz RX 118—174 MHz	220 MHz: TX 220—225 MHz RX 215—230 MHz
Mode	F3E (FM)	F3E (FM)	F3E (FM)	F3E (FM)
RF Output Power	1200 MHz: HI = 10W LO = 1W approx.	440 MHz: HI = 35W MID = 10W LO = 5W approx.	144 MHz: HI = 50W MID = 10W LO = 5W approx.	220 MHz: HI = 25W MID = 10W LO = 5W approx
Selectivity	1200 MHz: More than 12 kHz (−6 dB) Less than 36 kHz (−60 dB)	440 MHz: More than 12 kHz (−6 dB) Less than 24 kHz (−60 dB)	144 MHz: More than 12 kHz (−6 dB) Less than 24 kHz (−60 dB)	220 MHz: More than 12 kHz (−6 dB) Less than 24 kHz (−60 dB)
Sensitivity	12 dB SINAD less than 0.16μV	12 dB SINAD less than 0.16μV	12 dB SINAD less than 0 16μV	12 dB SINAD less than 0 16μV
Dimensions mm (inch) (Projections not included)	140(5.51)W × 40(1 57)H × 160(6 30)D mm (inch)	140(5.51)W × 40(1.57)H × 160(6.30)D mm (inch)	140(5.51)W × 40(1.57)H × 160(6.30)D mm (inch)	140(5.51)W × 40(1 57)H × 160(6.30)D mm (inch)

*Specifications are guaranteed for Amateur band only

TM-441A

• 440MHz single-band operation • 20 multi-function memory channels plus call channel • Multi-scan capability • Selectable CTCSS tone encoder • Multi-function microphone supplied

TM-241A

• 144MHz single-band operation • 20 multi-function memory channels plus call channel • Multi-scan capability • Selectable CTCSS tone encoder • Multi-function microphone supplied

TM-331A

• 220MHz single-band operation • 20 memory channels with multi-scan functions • Auto repeater offset (+1.6MHz) • Multi-function microphone supplied

TS-790A

• 144MHz/440MHz dual-band operation • 1200MHz unit (opt.) • All-mode operation • Satellite communications with Doppler effect frequency correction • 59 multi-function memory channels with lithium battery back-up

TR-751A/851A

• 144MHz (TR-751A) & 430MHz (TR-851A) single-band operation • All-mode (FM, USB, LSB & CW) operation • 10 memory channels with 5-year lithium battery back-up • Noise blanker • All-mode squelch

ALL-Mode Transceivers

	TS-790A	TR-851A	TR-751A
Frequency Range*	144 MHz: 144 – 148 MHz 440 MHz: 430 – 450 MHz 1200 MHz: 1240 – 1300 MHz	430 – 440 MHz	144 – 148 MHz
Mode	A1a (CW), J3E (SSB), F3E (FM)	A3J (SSB), A1 (CW) F3/F2 = WITH DCL system (FM)	A3J (SSB), A1 (CW) F3/F2 = WITH DCL system (FM)
RF Output Power	FM/CW: 45W (144 MHz) 40W (440 MHz) 10W (1200 MHz) SSB: 35W (144 MHz) 30W (440 MHz) 10W (1200 MHz)	HI = 25W LO = 5W	HI = 25W LO = 5W
Selectivity	CW•N = More than 500 Hz (– 6 dB) Less than 2 kHz (– 60 dB) SSB/CW = More than 2.1 kHz (– 6 dB) Less than 4.8 kHz (– 60 dB) FM = More than 12 kHz (– 6 dB) Less than 24 kHz (– 60 dB)	SSB/CW = More than 2.2 kHz (– 6 dB) Less than 4.8 kHz (– 60 dB) FM = More than 12 kHz (– 6 dB) Less than 24 kHz (– 60 dB)	SSB/CW = More than 2.2 kHz (– 6 dB) Less than 4.8 kHz (– 60 dB) FM = More than 12 kHz (– 6 dB) Less than 24 kHz (– 60 dB)
Sensitivity	SSB/CW = More than 12 dB SINAD Less than 0.16µv FM = 12 dB SINAD Less than 0.22µv	SSB/CW = 10 dB S + N/N Less than 0.11µv FM = 12 dB SINAD Less than 0.18µv	SSB/CW = 10 dB S + N/N Less than 0.13µv FM = 12 dB SINAD Less than 0.2µv
Dimensions mm (inch) (Projections not included)	330(13.0)W x 120(4.72)H x 330(13.0)D mm (inch)	180(13.0)W x 60(2.36)H x 215(8.46)D mm (inch)	180(7.09)W x 60(2.36)H x 195(7.68)D mm (inch)

*Specifications are guaranteed for Amateur band only

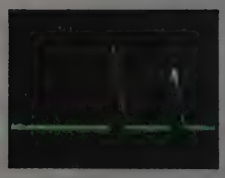
Kenwood Options— Precision Tools for the Discerning DXer

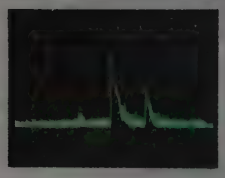
SM-230 Station Monitor

[illegible]

[illegible]

■ [illegible]





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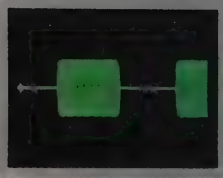
■ 10MHz synchronized oscilloscope



[illegible]

SP-950

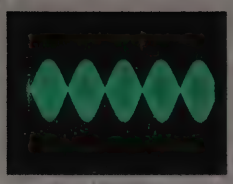
MC-90

SW-2100

SM-230

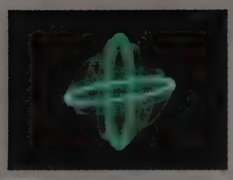
■ Waveform monitor mode

Signals of up to 150MHz can be viewed through the antenna terminal using your board LCD oscilloscope and thus eliminating troublesome cable connections. This allows continuous monitoring of the waveforms of the transmitted signals from your transceiver. A quick glance at the screen is all that is needed for ensuring accurate adjustments, measurements, gain setting, TX compression, compatibility signal quality, while indicating concerns and eliminating guesswork.



■ X-Y TUNE

The X-Y TUNE function employs the typical Lissajous pattern for RTTY tuning.



■ Tone tone generator (TONE & DETONE)

Equipped with 1000Hz and 2125Hz sine tone audio frequency oscillators for easy tone generation. The MC-90 can also be used to generate differences or as an oscilloscope for adjusting a discriminator amplifier.

TL-922/TL-922A

HF Linear Amplifier

The TL-922/TL-922A covers all bands, from 160m through 10m* including the three new Amateur bands, in SSB, CW and RTTY modes. This class AB1 grounded grid linear amplifier employs twin EIMAC 3-500Z power tubes to ensure peak performance. Note that it operates with semi break-in but not full break-in.

*Meets FCC 97.307(f)(3) specifications, 160m through 10m bands

FEATURES

- Twin EIMAC 3-500Z high-performance transmitting tubes
- Class AB1 G-G circuit
- Excellent IMD (intermodulation products distortion characteristics)
- Blower turn-off delay circuit
- Variable threshold level type ALC circuit
- Two way forward meter

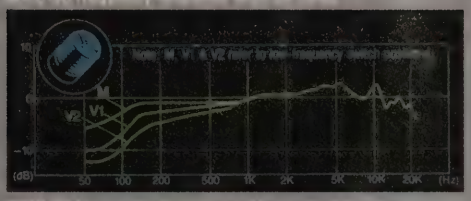
Frequency range: 160 to 10m bands
Transmission mode: SSB, CW, RTTY
Input impedance: 50Ω
Input VSWR: 1.5:1 or less
Power: 1.8 to 1.5kW
Dual power input: 1 line (Plate voltage)
Plate voltage: 2.5kV
Grid current: 1.5A
Grid voltage: -150V
Tube: 3-500Z x 2
Cooling: Forced air
Antenna relay: Yes
ALC: Variable threshold level type
Dimensions: 14.2(W) x 6.3(H) x 14.2(D)
Weight: 17kg (37.5 lbs)

MC-90

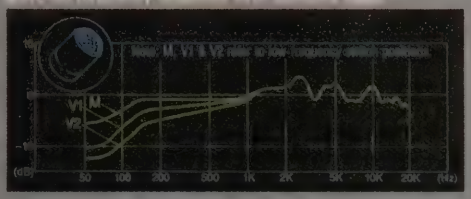
DSP-Compatible Desktop Microphone (250Ω)

The MC-90 is a high-quality communications microphone with a moving coil design engineered specifically to capture DSP performance characteristics, providing unparalleled audio quality. Supplied with it are two interchangeable heads: one has an output level characteristic that peaks at around 3kHz, making it ideal for DX applications, while the other has a flat frequency response more suited to general operations. There is also a 3-position switch to adjust low frequency response.

■ MC-90 frequency response with M head



■ MC-90 frequency response with V1 head



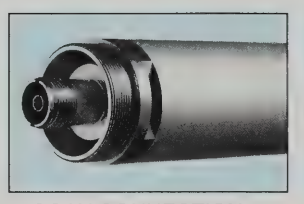
TL-922/922A

DIAMOND ANTENNAS –
THE STANDARD BY WHICH ALL OTHERS ARE JUDGED

ACCLAIMED AS THE TECHNOLOGICAL LEADER IN SINGLE & MULTIBAND ANTENNAS
●WIDE-BAND PERFORMANCE ●FACTORY ADJUSTED/NO TUNING REQUIRED
●HIGHEST GAIN ●UPS SHIPPABLE ●HIGH WIND RATING ●FIBERGLASS RADOME
●DC GROUNDED ●STAINLESS HARDWARE

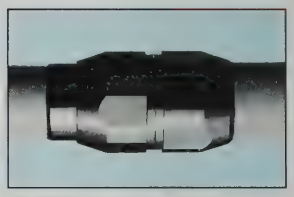
X-500HNA

RUGGEDIZED BASE/ REPEATER ANTENNA



COAX CONNECTION AT BASE END

HEAVY DUTY BASE/ RADIAL ASSEMBLY

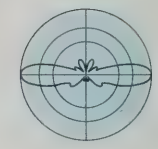


STRONG JOINT COUPLINGS

X series

MODEL	BAND(MHz)	GAIN(dBd.)	WATTS	CONN.	HT. Ft.	RATED WIND/ MPH
X-50A	144/440	4.5/7.2	200	UHF	5.6	135
X-200A	144/440	6.0/8.0	200	UHF	8.3	112
X-300A	144/440	6.5/9.0	200	UHF	10.2	112
X-510NA	144/440	8.3/11.7	200	N	17.2	90
X-510MA	144/440	8.3/11.7	200	UHF	17.0	90
X-500HNA	144/440	8.3/11.7	200	N	17.8	90+
X-700HA	144/440	9.3/13.0	200	UHF	24.0	90
X-2200A	144/222	6.0/7.8	150	UHF	11.5	112
X-3200A	144/222/440	6.0/7.8/8:0	100/200	N	10.5	112
X-6000A	144/440/1240	6.5/9.0/10.0	100/100/60	N	10.5	112

BAND: 144=144 - 148MHz. 222=222 - 225MHz. 420=420 - 430MHz.
430=430 - 440MHz. 440=440 - 450MHz. 1240=1240 - 1300MHz.
* X510NJ :144 - 147 / 430 -440MHz



147MHz

445MHz

RADIATION PATTERNS FOR X-500HNA/X-500MA/X-510NA

X510

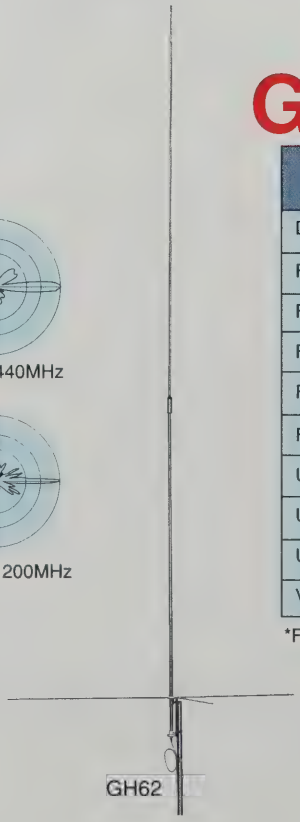
U-300A 440MHz

F-22

U-300A 1200MHz

F22

U5000



GH62

GH/F/U&V series

MODEL	BAND(MHz)	GAIN(dBd.)	WATTS	CON N.	HT. Ft.	RATED WIND/ MPH
DP-GH62	50	6.0	200	UHF	21.0	78
F-22A	144	6.7	200	UHF	10.5	112
F-23A	144	7.8	200	UHF	15.0	90
F-142A	222	5.5	200	UHF	6.0	110
F-718A*	440	11.5	250	N	15.0	110
F-1230A	1240	13.5	100	N	10.5	90
U-200A	440/1240	8.3/11.7	100	N	5.9	135
U-300A	440/1240	8.6/13.2	100	N	8.3	110
U-5000A	144/440/1240	4.5/8.3/11.7	100	N	5.9	135
V-2000A	50/144/440	2.1/6.2/8.4	150	UHF	8.3	110

*F-718A:440 - 450MHz, F-718J:430 - 440MHz, F-718L:420 - 430MHz

RF PARTS
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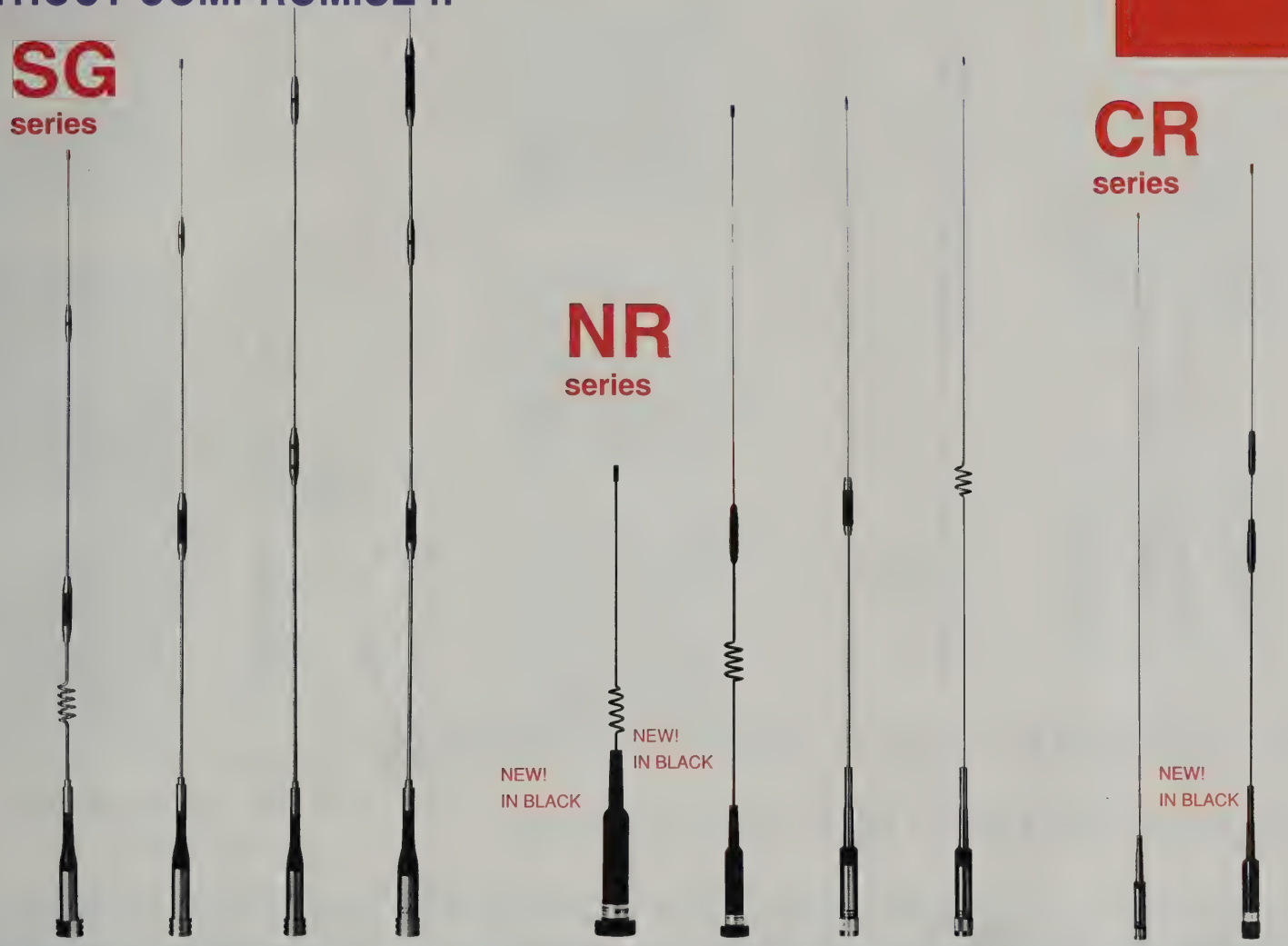
DIAMOND'S STATE OF THE ART VHF / UHF MOBILE ANTENNAS–MAXIMUM PERFORMANCE WITHOUT COMPROMISE !!

DIAMOND ANTENNA



MODEL	BAND	GAIN(dBd)	POWER (w)	MOUNT	HT (IN)	ELEMENT PHASING
NR-72BNMO	2m/70cm	2.15	100	NMO	13.8	1/4 λ ,1/2 λ
NR-73BNMO	2m/70cm	2.15/5.3	100	NMO	33.5	1/2 λ ,2-5/8 λ
NR-770SA	2m/70cm	2.15/2.15	100	UHF	16.9	1/4 λ ,1/2 λ
NR-770HA	2m/70cm	3.0/5.5	200	UHF	40.2	1/2 λ ,2-5/8 λ
NR-770HNMO	2m/70cm	3.0/5.5	200	NMO	38.2	1/2 λ ,2-5/8 λ
NR-770RA	2m/70cm	3.0/5.5	200	UHF	38.6	1/2 λ ,2-5/8 λ
NR-790A	2m/70cm	4.5/7.2	120	UHF	57.5	6/8 λ ,3-5/8 λ
SG-7000	2m/70cm	2.15/3.8	100	UHF	18.5	1/4 λ ,6/8 λ
SG-7200NMO	2m/70cm	3.2/5.7	150	NMO	36.6	1/2 λ ,2-5/8 λ
SG-7500A	2m/70cm	3.5/6.0	150	UHF	40.6	1/2 λ ,2-5/8 λ

MODEL	BAND	GAIN(dBd)	POWER (w)	MOUNT	HT (IN)	ELEMENT PHASING
SG-7900	2m/70cm	5.0/7.6	150	UHF	62.2	7/8 λ ,3-5/8 λ
SG-2000	2m	5.2	150	UHF	62.6	7/8 λ
NR-140A	1-1/4m	3.8	100	UHF	36.2	5/8 λ
NR-124	23cm	8.4	100	N	25	4-5/8 λ
CR-214S	2m/1-1/4m	2.15/3.4	120	UHF	37	1/2 λ ,5/8 λ
CR-224A	2m/1-1/4m	5.0/6.0	150	UHF	68.5	7/8 λ ,2-5/8 λ
CR-320A	2m/1-1/4m/ 70cm	2.15/3.8/5.5	200/ 200/100	UHF	37.4	1/4 λ ,1/2 λ , 2-5/8 λ
NR-2000NA	2m/70cm/ 23cm	3.15/6.3/9.7	100	N	39	1/2 λ ,2-5/8 λ , 5-5/8 λ

SPECIAL FEATURES

- Factory pre-tuned /no adjustment
- Highest Performance antennas
- SG&NR series do not need grounding
- NMO and UHF (PO) base styles
- New black color models available
- Fold-over feature on most models

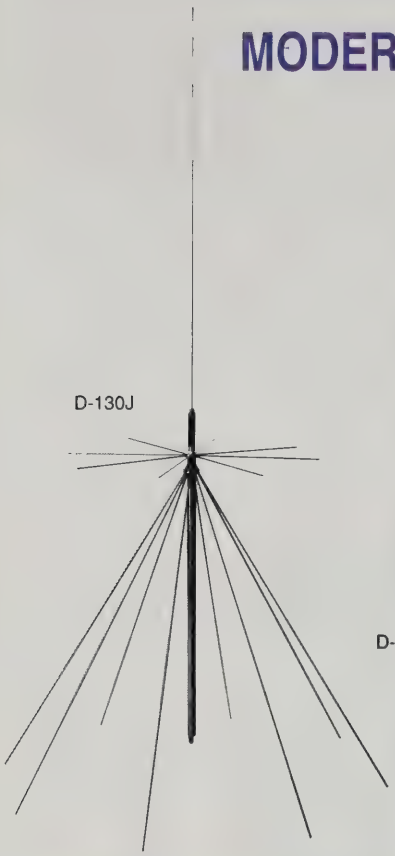
FOLD-OVER

PATENTED ONE-TOUCH FOLD-OVER FEATURE

RF PARTS
SAN MARCOS,CALIF.
(619) 744-0900

HIGH GAIN ANTENNAS FOR TODAYS MODERN SCANNERS & VHF/UHF RECEIVERS

DIAMOND ANTENNA



D-505
50-1500MHz mobile receiving antenna with built-in RF hybrid IC amplifier. Adjustable 0-20dB gain. UHF conn.Includes Gain Controller.

D-707
50-1500MHz base receiving antenna with built-in RF hybrid IC amplifier.
0-20dB gain. UHF conn. Includes Gain Controller.

D-130J
Super Discone antenna for wideband receiving & transmitting Rated at 200 Watts.60-1300MHz.

RH77B
2m/70cm Dual-band antenna for handheld transceivers.
New design gives 3-6dB gain over standard HT antennas.
Broadband receive. BNC. Lth.15".

RH951
2m/70cm/23cm. Broadband receive including 800/900MHz/ cellular. BNC. Lth.18".

DUPLEXERS AND TRIPLEXERS FOR COMBINING AND SPLITTING VHF/ UHF FREQUENCIES

- Lowest loss
- Maximum Band Isolation
- Low VSWR

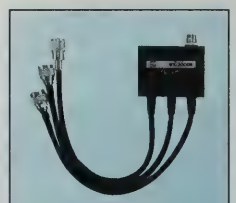
MX-72D/DN

MX-72H/N

MX-214

MX-324

MX-3000D/DN


MX-3000N

MODEL	MX-37N	MX-72D	MX-72DN	MX-72H	MX-72N	MX-214	MX-324	MX-2000	MX-3000	MX-3000N	MX-3000D	MX-3000DN
FREQBAND MHz	1.6-470 900-1300	LPF 1.6-30	LPF 140-150	HPF 400-460		140-150 220-225	LPF BPF HPF 1.5-150 220-225 400-550	LPF BPF HPF 1.6-60 110-170 300-950	LPF 1.6-160	BPF 350-500	HPF 850-1300	
POWER CW WATTS P.E.P	100/50 200/100	400 1000	150 400	100 250		150/100 300/200	800 600 500	800 800 500	400 800	200 400	100 200	
THRU LOSS/dB	0.25/0.45	0.15	0.15	0.25		0.3/0.4	0.3 0.4 0.4	0.15 0.2 0.25	0.2	0.3	0.4	
ISOL	45dB	60dB				45dB	40-50dB	60dB	55dB			
VSWR	1.2 :1	1.2 :1				1.2:1	1.2:1	1.2 :1	1.2 :1			
CONNECTOR COMPLEMENT	N MIX 430 1200 N N	M MIX 144 430 M M	M MIX 144 430 M N	M MIX 144 430 M M	M MIX 144 430 M N	M MIX 144 220 M M	N MIX 144 220 430 M M M	M MIX 50 144 430 M M M	N MIX 144 430 1200 M M N	N MIX 144 430 1200 M N N	N MIX 144 430 1200 M M N	N MIX 144 430 1200 M N N
CONN	12"cabie w/ connectors	Direct		12"cabie w/connectors		12"cabie w/connectors			12"cabie w/ connectors		Direct connection	

Note: Connectors shown as "M" are low loss equivalent of SO-239 &PL-259.
Connectors shown as "N" are standard Type-N.

RF PARTS
SAN MARCOS,CALIF.
(619) 744-0900

PREMIUM GRADE ANTENNA MOUNTS BY DIAMOND

DESIGNED FOR TODAYS HIGH PERFORMANCE ANTENNAS

Super Gainer series folding type gutter mount
K300M(Coaxial cable : RG188A/U·5DSFA-3.5m) UHF jack - UHF plug
K300 Without cable assembly

Super Gainer series hatchback door/trunk lid mount
K400M(Coaxial cable:RG188A/U·5DSFA-5m) UHF jack - UHF plug
K400 Without cable assembly
K400K-3/8M
3/8×24Thd with cable

Variable angle trunk lid mount
(Coaxial cable:RG188A/U·5DFV-5m)
K600M UHF jack - UHF plug
K600N N jack - N plug
K600P UHF jack - N plug

NNR series hatchback door/ trunk lid mount
K200 Without cable assembly

Teflon coaxial cable for mobile
FE5M(Coaxial cable:RG188A/U·5DFV-5m) UHF jack - UHF plug

Strong magnet antenna base
DP-SPM / 58U(Coaxial cable : RG58A/U-4m) UHF jack - UHF plug
DP-SPM / 5D(Coaxial cable : 5D2V-4m) UHF jack - UHF plug
DPK-5NM(Coaxial cable: 5D2V-4m) N jack - N plug
DPK-4NM-M(Coaxial cable: 3.5DQEFV-4m) UHF jack - N plug
Max.Ant.ht.48"

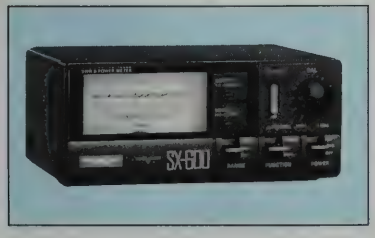
Super Gainer series folding type carrier/mirror mount
K540 Without cable assembly

DIAMOND ANTENNA BASES
GLP-5D UHF base connector 5D & 8X cable
GLP-58 UHF base for RG-58/U cable
GLP-5N N type base 5D & 8X cable

PRECISION SWR／POWER METERS FOR THE 1990'S

SX Meter

SX-1000(Two Sensors S1/S2)
Frequency Range:1.8-160MHz(S1),430-1300MHz(S2)
Power Ranges:5W/20W/200W*
Insertion Loss:0.2dB(S1),0.15dB(S2)
Minimum W for VSWR:1W(S1),2W(S2)



SX-600(Two Sensors S1/S2)
Frequency Range:1.8-160MHz(S1),140-525MHz(S2)
Power Ranges:5W/20W/200W *
Insertion Loss:0.2dB(S1),0.3dB(S2)
Minimum W for VSWR:1W(S1),4W(S2)

SX-400
Frequency Range:140-525MHz
Power Ranges:5W/20W/200W*
Insertion Loss:0.1dB/140-250MHz,0.2dB/400-470MHz
0.3dB/470-525MHz
Minimum W for VSWR:4W

SX-200
Frequency Range:1.8-200MHz
Power Ranges:5W/20W/200W*
Insertion Loss:0.15dB/1.8-3.5MHz,0.2dB/150-200MHz
Minimum W for VSWR:1W

SX-100
Frequency Range:1.6-60MHz
Power Ranges:30W/300W/3KW*
Insertion Loss:0.1dB
Minimum W for VSWR:15W

Note:SX-600 & SX-1000 meters each have two directional couplers (sensors). Two sensors allow simu ltaneuus connection to two antenna coax cables.
SX Meter Dimensions (W/H/D):6.1"×2.5"×4.1"
*Denotes maximum intermittent measurement power.

RF PARTS
SAN MARCOS,CALIF.
(619) 744-0900

The World Standard

In Multi-Mode Controller Technology

The PK-232MBX is the undisputed leader in multi-mode controllers. Here are a few reasons why:

Filtering. With a high-quality front-end filter (seventeen-pole effective filtering), the PK-232MBX gives you the best HF performance of any multi-mode controller.

Software. Our Host Mode control programs offer unmatched power and versatility in an easy to use, intuitive format. Available for PC-compatible, Macintosh and Commodore computers.

Packet Lite™. On HF, two PK-232MBXs communicating with AEA's exclusive Packet Lite can achieve a 40% increase in throughput over standard packet.

Modes. The PK-232MBX can transmit and receive AMTOR, Morse, Baudot, ASCII, Packet, and WEFAX. In addition, it can receive NAVTEX (NAVigational TelEX) and TDM (Time Division Multiplex) for a total of eight different types of signals.

AMTOR and Packet Mailboxes. The only controller with a mailbox for both packet and AMTOR is of course the PK-232MBX.

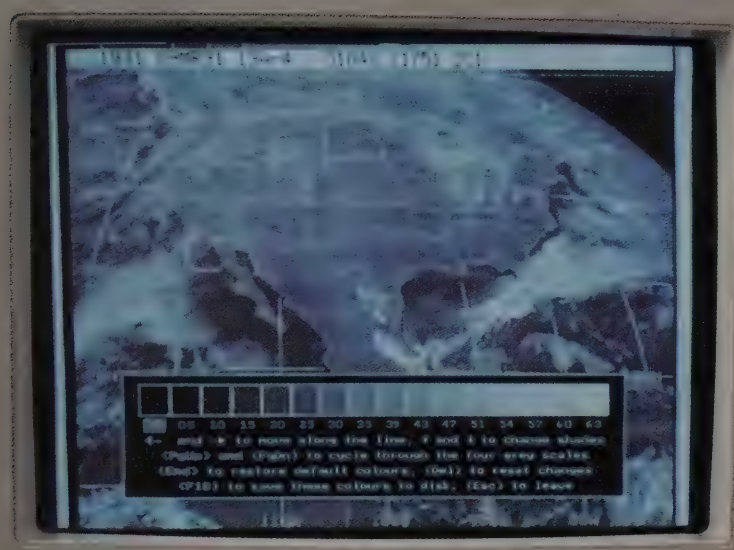
See for yourself why more hams choose the PK-232MBX than any other controller.
In two words,
UNBEATABLE PERFORMANCE.

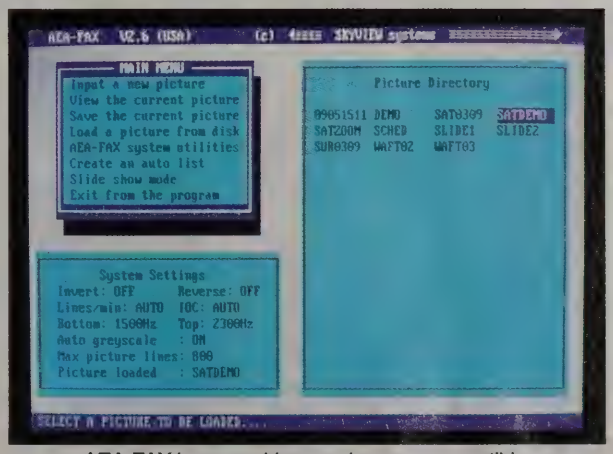
AEA

Advanced Electronic Applications, Inc.

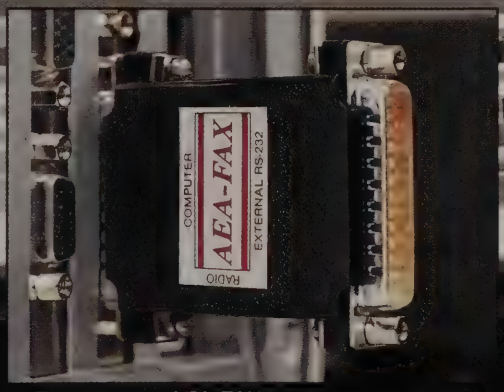
P.O. Box C2160/2006 196th St. S.W. Lynnwood, WA 98036-0918
Customer Service (206)775-7373 Upgrade Hot Line (206)774-1722 Catalog Request Line (800)432-8873
CompuServe user ID 76702,1013
Specifications subject to change without notice or obligation. © Copyright 1991 by AEA, Inc. All Rights Reserved.

Weather FAX





AEA-FAX is menu-driven and mouse compatible for ease of use.



The compact AEA-FAX hardware includes a "daisy-chain" RS-232 input.

AEA-FAX is all you need to interface with your HF receiver and PC-compatible computer to pick up great looking, information packed weather maps, photos and charts.

Its features include an on-screen Miniscope tuning display, unattended image capture, slide show mode for showing multiple images, disk and printer interface, 16 grey levels (VGA) or false-color separations (EGA), and much more.

If you have an interest in the weather, look no further. The device plugs into your existing COM port (1 or 2) and into your HF receiver's External Speaker jack for quick and easy setup; just plug & play!

For more information on AEA-FAX, contact your favorite ham radio dealer.

To receive a catalog of our complete product line, call toll free (800) 432-8873.

AEA

Advanced Electronic Applications, Inc.

P.O. Box C2160 / Lynnwood, WA 98036-0918
Customer Service (206) 775-7373, Upgrade Hot Line (206) 774-1722
Catalog Request line (800) 432-8873, CompuServe User ID 76702,1013
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WE'VE GOT EVERYTHING UNDER CONTROL

In the world of multi-mode contollers, nothing tops the DSP-2232 or DSP-1232 from AEA. When you choose either the dual port DSP-2232 or single port DSP-1232, you'll have just what you need to couple HF or VHF/UHF (or both) transceivers with a personal computer or computer terminal. Each converts incoming analog signals into digital data by means of a 12-bit, high speed converter.

Developed by AEA — with over 10 years of multi-mode controller development experience — the DSP-2232/1232 are the most advanced and versatile controllers available anywhere. They give you the capability to control all legal Amateur digital modes popular on both HF and VHF. New modems only require new software which can be installed with an EPROM chip, or downloaded from a telephone BBS binary file into the DSP's RAM. You won't need to replace your DSP-2232 or DSP-1232 as no new hardware or modifications will be needed as new modes become available.

Whatever you've thought about doing in Amatuer radio, it's here in the DSP-2232 /1232. All PK-232 MBX modems (Packet, AMTOR, etc.). All satellite modems (PSK, 4800 bps PACSAT, G3RUH 9600 bps, U022 equalized, 400 bps OSCAR-13). Analog modems for HF FAX, FAX APT, and SSTV. 9600 bps K9NG/G3RUH for terrestrial and satellite use. Each also offers internal RAM for uploading modems, up to 36 simultaneous packet connections, EPROM up to 2 Mbits, software selectable radio ports, Mailbox accessible through both ports, dedicated printer port, RTTY digital noise gate, ARQ tolerance command, etc.

The DSP-2232 adds even more control with its dual port gateway, front panel LCD showing connect and packets status, retrieval, call sign connected to, last call monitored and "marquee" display of received RTTY signals.

Get control of your digital operating position with the DSP-2232 or DSP-1232 from AEA. You'll be on top of the Amatuer radio world, too.

To connect with the AEA dealer nearest you or for product sheets, call (800) 432-8873.

Advanced Electronic Applications, Inc.
PO Box C2160, 2006 - 196th St. SW, Lynnwood, WA 98036 Sales: (206) 774-5554

AEA
Connect with us

FREEDOM OF SPEECH

The IsoLoop 10-30 HF Freedom Antenna frees you from restricted areas.

The IsoLoop 10-30 HF Freedom Antenna frees you from antenna restrictions.

AEA's engineering team has put together the most efficient small loop antenna you'll find for HF performance. It's the technical answer needed to send and receive from your apartment, condo or anywhere zone restrictions apply.

The reason you get such big performance in a small package is the efficiency of the IsoLoop 10-30: it's 72% on 20m, rising to 96% on 10m. Your IsoLoop delivers lower SWR and extended frequency coverage because the loop is isolated from the feedline. Your radiated power goes into the antenna, not into the shack.

Electrically, the large diameter main loop serves as an inductor and is tuned with a 10,000 volt variable capacitor to form a very high Q resonant circuit. That gives you the added benefit of suppressing both transmitted and received off-frequency signals. The capacitor itself is a heavy-duty, split stator design.

The 35" main loop is made of Iridited aluminum and is welded to the tuning capacitor to reduce loss. All welded connections and the custom capacitor further minimize losses. The very low impedance of the radiating loop (typically 0.06 ohm) is matched to 50 ohms using the technique of mutually coupled air core inductors — essentially lossless impedance matching.

Technically speaking, the IsoLoop 10-30 HF is the big value in small antennas.

To connect with the AEA dealer nearest you or for product sheets, call (800) 432-8873

AEA

Connect with us

Advanced Electronic Applications, Inc.

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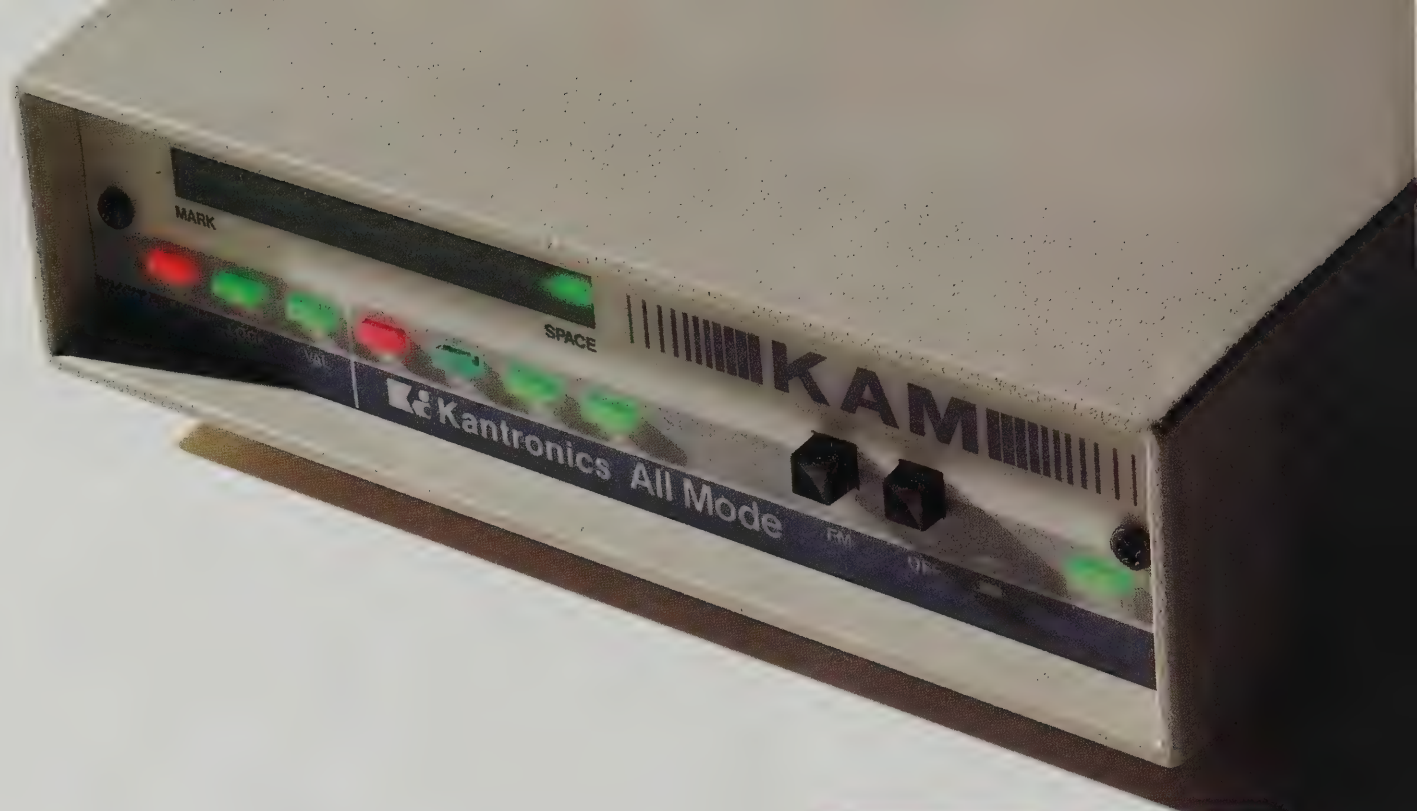
Sales: (206) 774-5554



Kantronics **KAM & Hostmaster**

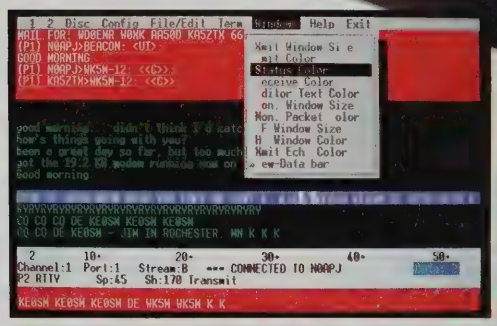
Simultaneous multi-mode terminal hardware & software for the PC, Mac and Commodore-64.

With Hostmaster terminal software running on your PC compatible, Macintosh or Commodore 64 computer, a Kantronics All Mode (KAM 5.0), your own HF/VHF transceivers, and just a few keystrokes, you can work any mode on HF and packet on VHF at the same time.

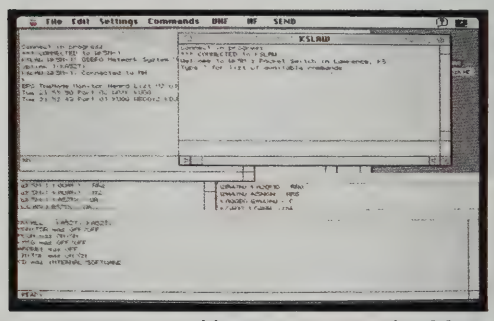
Operate CW, RTTY, ASCII, FEC, ARQ, packet or copy NAVTEX on HF and packet on VHF/UHF simultaneously! Toggle back and forth between any HF mode and packet for sending, while viewing monitored and connected packets and HF data at the same time.

New firmware features (terminal program independent) include AMTOR access to your personal mailbox, remote access for sysops and SEND PRIVATE, SEND BULLETIN, SEND TRAFFIC and enhanced mailbox commands. Blinking mail-waiting LED also provided, independent of software. Hostmaster features include:

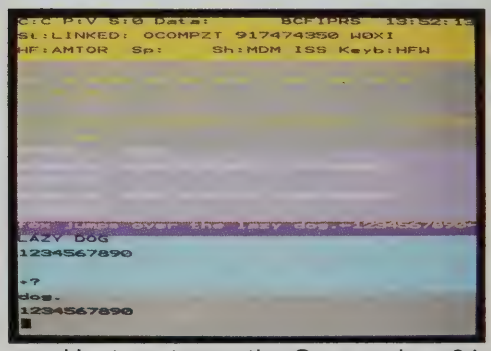
- split screen operation: receive and transmit
- menu display line
- packet monitor window
- separate packet connect window per channel
- xmit echo display line
- non-packet window (for KAM only)
- status display lines
- xmit buffer per channel
- file buffer per channel
- file transfers and file captures
- compatible with all Kantronics 5.0 firmware: KAM, KPCs and DataEngine 2.0.



Hostmaster on the PC



Hostmaster on the Mac



Hostmaster on the Commodore 64

Kantronics 1202 E. 23rd St, Lawrence, KS 66046

rfconcepts **DualBand**Amp

Added punch for base or mobile dual-band radios.

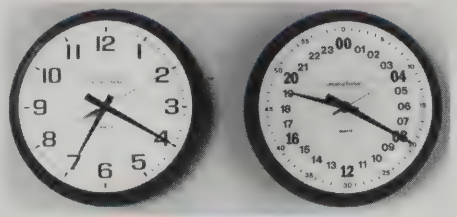
- power output — 200 watts @ 144-148 Mhz; 125 watts @ 438-450 Mhz
- power input — 10 watts to trigger; 20 watts for full output
- current — 40 amps
- size — 8" x 12" x 4"
- weight — 15 pounds (6.8 kg)
- built in 13.8 to 28 VDC switching supply
- N-type connectors, single input/output for use with dual band rig and duplexor
- automatic RF sensing and band switching
- automatic thermal shut-down, 55 deg. C.
- automatic VSWR detector and shutdown set at 2-1
- LED bargraph indicating relative output and reflected power

Kantronics **KPC**3

New from Kantronics. Combines user friendly operation, compact design, low power, large RAM potential and high performance into a single packet unit.

- new user and expert command sets
- great price!
- two manuals: getting started and full reference manual
- modes: New user, terminal, KISS, HOST, BBS, KA-NODE and WEFAX
- small size: .8" x 5.1" x 5.1"
- low power: less than 20 ma w LED off
- room for user installed 9v battery
- weight: less than a pound
- full-featured PBBS mailbox
- battery backed 32K RAM, expandable to .5 MB
- remote access for command changes
- optional: Hostmaster software for PC, Mac or C-64
- optional: real time clock module

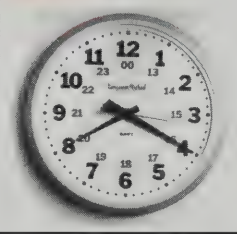
Clocks for the Hamshack



BMI Wall Clocks

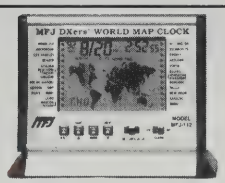
BMI 972A (left) • Battery operated 12-hour time quartz controlled clock with 12" dial and sweep second hand Black textured case and clear glass crystal. Requires a single "AA" battery. 14" diameter x 1¾" deep.....**$37.95**

BMI 973A (right) • 24-hour version.....**$49.95**



BMI 972AD
14" diameter 12/24 hour format wall clock
$39.95

MFJ Clocks

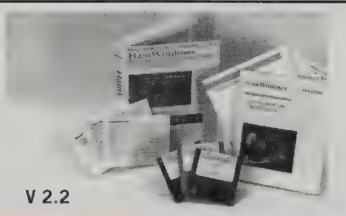


MFJ-112 • Dx'ers World Map Clock and Calendar. Latest electronic and display technology shows world map with 25 major world cities selected by pushbutton. 12-hour time format with alarm feature. Large 1/2" LCD readout shows: Time, Month and Day in 24 world time zones. Includes tilt bracket and long life lithium battery. 5¼"w x 3¼ "h x ⅝"d **$24.95**

Small 24-hour Clocks • Two models - a Dual Clock with separate UTC and local time displays, or a Single Clock with 24-hour time only. Brushed aluminum frame, 5/8" high LCD numerals, and sloped face. Flashing seconds colon. Includes battery.
MFJ-107B • Single Clock, 2¼ "w x 1"h x 2"d..... **$9.95**
MFJ-108B • Dual Clock, 4¼ "w x 1"h x 2"d..... **19.95**

AEA World Clock

Features a dual LCD display that indicates both 24-hour GMT and 24-hour local time. A date line indication dislays + or – for date change. Also has a 24-position slide switch for quickly showing the local time in major cities around the world. Alarm with snooze, lighted display and flip-stand are provided. Includes carrying case and batteries. 2"h x 4½"w x ½"d **$25.00**



V 2.2

KENWOOD HamWindows™

Software for IBM PC & compatibles. Provides 8 full color windows including transceiver control, station log, world almanac, awards tracking, SWL data base, greyline maps, regional world maps, and packet TNC control. KENWOOD HF transceiver control with proper interface. **HW-3** 3½" or **HW-5** 5¼" disk **$139.95**

ASTRON Power Supplies

Features: 105-125V AC input/13.8V DC output; internally adjustable from 11-15V. • Electronic regulation with fold-back current limiting and crowbar overvoltage protection • Heavy-duty heat sink • 3-wire power cord • One-year warranty • Made in U.S.A.

Separate voltage and ampere meters on RS-20M, 35M and 50M. Separate voltage and ampere meters plus front panel voltage adjustment (with 2-15V DC range) on VS-20M, VS-35M and VS-50M. Models RM-35M and RM-50M are for rack mounting.

Astron Model	Cont. Amps	ICS Amps	Size (in.) h w d	Ship. wt.	Regular Price	SALE Price
RS-7A	5	7	3¾ x 6½ x 9	9	$68.95	$59.95
RS-10A	7½	10	4 x 7½ x 10¾	11	85.95	69.95
RS-12A	9	12	4½ x 8 x 10¾	13	99.95	79.95
RS-20A	16	20	5 x 9 x 10½	18	121.95	99.95
RS-35A	25	35	5 x 11 x 11	27	197.95	149.95
RS-50A	37	50	6 x 13¾ x 11	46	285.95	219.95
Separate volt/amp meters						
RS-20M	16	20	5 x 9 x 10½	18	144.95	119.95
RS-35M	25	35	5 x 11 x 11	27	204.95	169.95
RS-50M	37	50	6 x 13¾ x 11	46	314.95	239.95
Variable output, separate volt/amp meters						
VS-20M	16	20	5 x 9 x 10½	20	170.95	139.95
VS-35M	25	35	5 x 11 x 11	29	238.95	189.95
VS-50M	37	50	6 x 13¾ x 11	46	330.95	259.95
Rack mount models; separate volt and amp meters						
RM-35M	25	35	5¼ x 19 x 12	38	318.95	249.95
RM-50M	37	50	5¼ x 19 x 12	50	354.95	279.95
RM-60M	50	55	7 x 19 x 12	60	467.95	359.95

ASTRON Solid-state power inverters

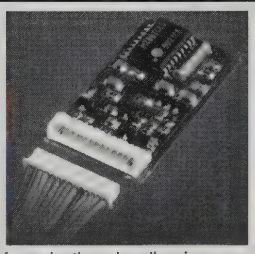
GENERAL PURPOSE

Model 12/115 • Converts 12V DC to 115VAC @ 60 Hz output. Provides AC house current in your boat, car, truck, camper, etc. Powers small household appliances, TV, hand tools, AC radios and lights within power rating of 200W continuous, with peaks up to 240W. Square wave output, overload protected. Not recommended where high transients are not tolerable. 4½"h x 8"w x 9"d, 9 lbs. .. **$59.95**

AIRCRAFT

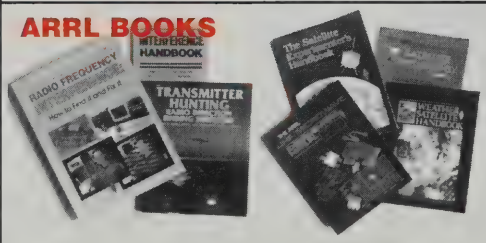
Model 2412 • Converts 22 to 32V DC to 13.8V DC @ 9 amps. Eliminates tapping into 28V battery for 12V.... **$69.95**
Model 2412-20 • Same as above, but 16 amps..... **109.95**

NORCOMM Sub-minature Touch-Tone® Decoder



Model NC401 • Designed for selective signaling in many applications. Combines three distinct, separately addressable DTMF Decoders in one unit for multiple user-configurable output functions. Decodes all 16 standard DTMF characters with an address length of 1–14 characters and features E2Prom memory for non-volatile storage of programmed codes, input and output functions, remote programming, deadbeat disable and user outputs. Programs by means of a conventional DTMF Encoder. Comes with 12" multiple leads and plug. 83"w x 1.5"l x .23"h.....**$59.95**

ARRL BOOKS



AZIMUTH World RadioSphere

Model ARS-2 • Now you can see the World of Ham Radio with this gorgeous 12-inch acrylic World Globe. Translucent colors – blue water with green land masses. This superb, hand blown globe shows all DX radio prefixes and world radio zones (in red), latitude and longitude, international date line, cities, countries and more. All graphics are applied, sealed and protected inside of the globe. With the white wax pencil provided you can plot DX headings and distances, then rub off and start fresh. Handsome clear base. **$99.95**

Forbes Group Ventenna™

It's Virtually unnoticable because it looks like part of the normal structure. It simply slips over an existing 1"–2½" inch plumbing vent pipe. Just connect your coax and you're on the air without any tuning or measuring required.

Models:
VT-14 • 2 meters, 3 ft. tall, 2.6dB gain **$44.95**
VT-22 • 220MHz, 25" tall, 2.6dB gain **$44.95**
VT-27• 2m/440MHz **$66.95**
VT-44 • 440MHz, 14" tall, 2.6dB gain **$44.95**
VT-15S • **Scanner Model** 3 ft. tall, 2.6dB gain **$44.95**
VT-SWL • **SWL Model** 3 ft. tall, 20dB active gain **$119.95**

CROSS DEVICE S.T.U.F. ***DIELECTRIC WATERPROOFING FILLER*** *(Non-Hardening)*

For COAXIAL CONNECTORS
Waterproofs from the inside out!

- High purity macroscopic foam, dielectrically simulates coaxial cable core.
- Contains no silicones, etc. to harm cable material
- Just fill connector and tighten – hydraulically channels filler into all connector voids and ports where moisture can infiltrate.
- About 4.5¢ per connection.

QUICK & EASY – COMPLETE – WITH NO INSERTION LOSS **$4.50** PER TUBE

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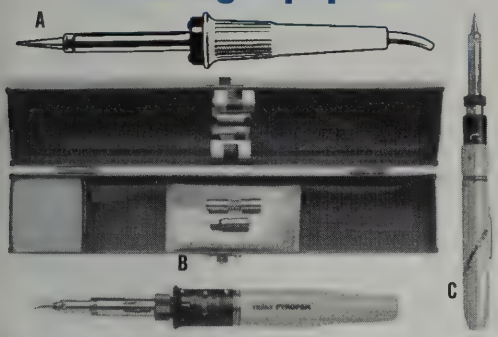
Soldering Equipment



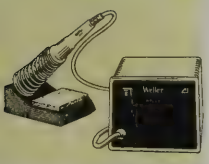
WELLER Model W-60P (A) • Temperature Controlled 60-Watt pencil-type soldering iron. Tips available for 600°, 700°, or 800°F. Supplied with 1/16" 700°F screw-driver tip. Only 7½" long, 2½ oz. 6 foot cord. 120V AC..... **$49.95**

WELLER Model WP-25 (A) • 25-Watt pencil-type soldering iron for work on delicate electronic circuits. 750°F tip temperature. 7⅛" long, 1¾ oz. 4 ft. cord, 120V AC **$35.30**

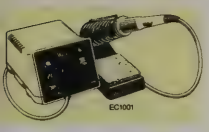
WELLER WSTA3 Pyropen® (B) • Lightweight and completely portable soldering iron. Operates for up to 3-hours on a charge of cigarette lighter butane. Soldering temperature control fadjustable rom 392° to 932°F, and fast heat-up time - ready to solder in just 30-seconds. Supplied with 3 tips for soldering, hot air (1202°F), and brazing..... **$69.95**

WELLER WST2 Pyropen® Jr. (C) • Portable **mini** butane powered soldering iron. Recharges in seconds with regular cigarette lighter butane .Soldering temperature control from 392° to 842°F. Also, hot blow feature (806°F) and torch feature (2372°F). Handy pocket clip..... **$59.95**

WELLER 7200PK • Compact, lightweight 75W soldering gun. Handles the trickiest soldering jobs. Flat, self-supporting back acts as a convenient rest. Comes with carrying case, extra tip. and solder. 120V **$24.95**



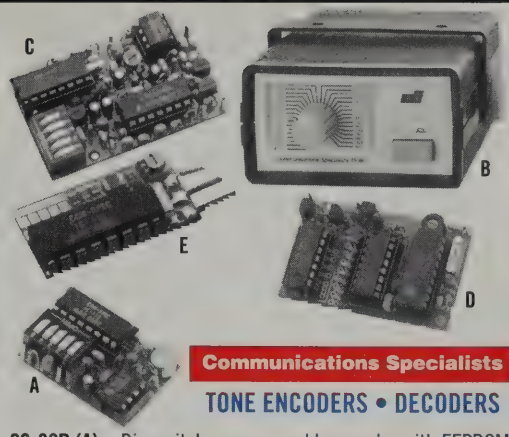
WELLER WTCPT • Controlled output soldering station. 3 temperature ranges: 600°F, 700°F and 800°F. Lightweight pencil iron is safe for IC soldering. Power unit with unitized on-off rocker switch with indicator light. Storage tray for extra tip and tip cleaning sponge..... **$99.95**



WELLER EC-1002-1 • Compact design.Soldering pencil stand connects to right or left side of unit. Variable temperature diode display, self feeding reservoir.Tray stores extra temp. sensing tips **$169.95**

WAHL 7540 ISO-TIP® • Cordless soldering iron. Powered by a rechargeable Ni-Cad battery with a capacity of 125 joints per charge. Recharges in 12-16 hours. Tip performance up to 50W and over 700°F. Built-in work light, and "lock-off" switch. Iron, recharging stand and tip.....**$29.95**

WAHL 7740 ISO-TIP® • Cordless "Quick Charge" model. Contains a premium battery for high-rate charging. Partially discharged unit will return to full capacity within 1-2 hours; complete recharge in 3-4½ hours. Iron, recharging stand and two tips **$34.95**



Communications Specialists

TONE ENCODERS • DECODERS

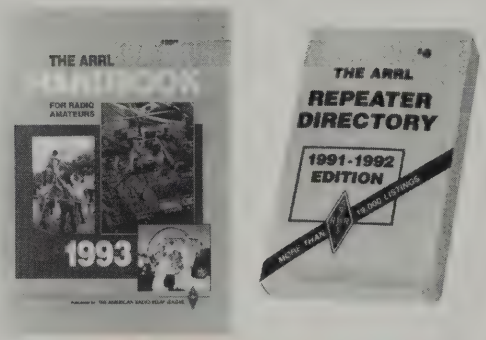
SS-32P (A) • Dip switch programmable encoder with EEPROM memory. Provides 32 standard or EIA tone frequencies in order between 67 and 250 Hz. Microminiature–fits inside most portable transceivers. 0.9" x 1.3" x 0.4", 6-25 VDC..... **$28.95**

SS-32SMP (E) • Super small programmable CTCSS encoder for handhelds. Comes standard with 32 EIA tones between 67 and 203 5 Hz. Individual tones are selectable by soldering binary coded jumpers. 0.53" x 1.0" x 0.16", 6-15 VDC **$27.95**

TE-64 (B) • A multi-purpose encoder providing 64 frequencies which include 32 sub-audible, 19 burst-tone, 8 Touch-Tone and 5 test frequencies. Separate outputs for the high and low frequency ranges. 5¼" x 3.3" x 1.7", 6-30 VDC.....**$79.95**

TS-32P (C) Field programmable CTCSS encoder-decoder. DIP switch programmable. All 32 EIA tones from 67-203.5 Hz are included in std. memory. 1¼" x 2", 0.4", 6-25 VDC **$57.95**

DTD-1 (D) A very small high quality, low cost DTMF decoder. Capable of decoding any one of 5,040 four digit codes to provide a latched or momentary open collector output for single function operations. 1.25" x 2" x 0.4", 6-12 VDC..**$59.95**



1993 ARRL Handbook

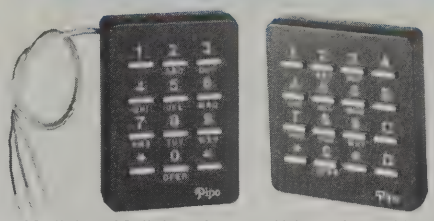
The 70th Edition! – contains 1200 pages with 2100 charts and illustrations. A guide to radio theory every ham should know, including the latest digital modes and hundreds of explanatory and practical circuits. Lots of construction projects for beginners, old-timers and everyone in between. Includes a handy reference guide with updated lists of parts and equipment suppliers and other data on solid-state components and transmitting tubes..... **$25.00**

ARRL Repeater Directory

Lists more than 18,000 VHF/UHF repeaters and more than 2200 digipeaters located around the US, Canada, Mexico and several other countries. Also lists of more than 500 beacons from 14MHz to 24GHz. Includes band plans, a CTCSS (PL™) tone chart and a list of frequency coordinators and ARRL Special Service Clubs. Convenient pocket size..... **$6.00**

PIPO Communications

High Quality DTMF Encoders

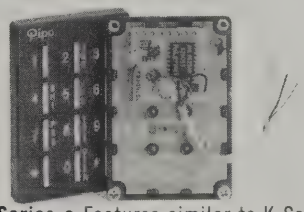


- 12-digit or 16 digit pads
- Steel Keys
- Sealed Gold Dome Contacts
- Self-contained
- NO RFI
- Simple 3-wire connection
- Voltage 8.5 to 16V DC
- Temperature -22 to +160 F
- Adjustable level and timing
- Front panel adjustable
- Includes template, hardware and schematic

Small!...

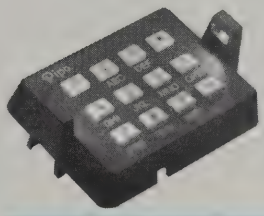
PK-1 • 2.65"h x 2"w x .045"d • **PK-2** • 2.65"h x 2.5"w x 045"d

K-Series option features a built-in keying circuit and relay to automatically key a transmitter or other system. When any key is depressed, a relay closes for 0 to 3 seconds–adjustable with trimpot. **M-Series** option is a special encoder package for mounting any PK-1, PK-1K, PK-2 or PK-2K PIPO encoder to surfaces that are inaccessible from the rear such as walls, mobile dashboards, panels, etc. This package consists of a frame which secures to the mounting surface with the encoder press-fitting into the frame.



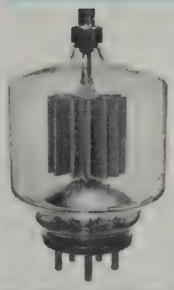
P-7 and P-8 Series • Features similar to K-Series but rugged-designed for the demanding Land Mobile Industry.Your choice for radios or systems exposed to harsh or abusive environments. **Smallest!**- miniature electronic design, low distortion and adjustable audio output.

P-7H • 12 key, horiz. format, 1.50"h x 2.16"w x 0.20"d
P-7V • 12-key, vert. format, 2.16"h x 1.50"w x 0.20"d
P-8V • 16-key, vertical format, 2.16"h x 1.50"w x 0.20"d



PP-5 Series • 12-key encoder with sounder to confirm that each key has been fully depressed. Illuminated by two incandescent bulbs. 2.15"h x 3.3"w x 0.5"d, 9-16 VDC.

For PIPO Prices see page 12



It's time to replace those aging finals! . .

EIMAC 3-500Z's

$149.95 each
$145.00 each (2 & up)

Order Toll Free: 1-800-558-0411 ***FAX: (414) 358-3337***

AMATEUR ELECTRONIC SUPPLY® Inc.

5710 W. Good Hope Road; Milwaukee, WI 53223 • Phone (414) 358-0333

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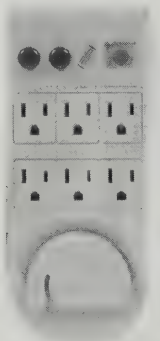
Watch for Future AES® Branch Store Openings!

AIM Electronics

AIM DC Power Supply • Light duty model, rated at 4 amps with 5 amp surge. On/off switch, binding posts, LED "on" indicator, fuse protection. Input: 115V AC, output: 13.8V DC regulated. 7¾" x 4¾" x 3", 5½ lbs ..... **Model 38-384 $39.95**

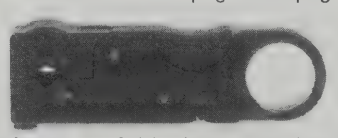
AIM AC Power Wall Surge Protector
Plugs into wall socket, provides 6 "U" grounded outlets. Internal Metal Oxide Varistors and filter network protect equipment from power line spikes and surges up to 4.5kV/4500A while reducing noise up to 54dB from 150kHz to 20MHz. Rated 125V @ 15 amps/1875 watts continuous duty. Push-to-reset circuit breaker, indicator light. 6"h x 3½"w x 1¾"d..... **Model 37-208 $19.95**



AIM Tele-Communications Guard
A surge and EMI/RFI filter that provides protection for valuable and sensitive high-tech electronic equipment. such as phones, modems, computers, FAX, TELEX, and answering machines from damage caused by dangerous high voltage surges up to 6kV @ 4500A. Also reduces line noise 10 to 35dB in the 500kHz to 30MHz range. Plugs into wall outlet and provides 6 "U" grounded outlets. 125V @ 15 Amps, 1875W.
Model 37-503 $39.95

AIM Tube Axial Equipment Fans
Strong Black Plastic Frame • Plastic fiberglass-filled impeller

48-1123TP AC Fan • 120V AC @ 0.10A, 8W. 1700 RPM, 53 CFM. 4.68" x 4.68" x 1.5"d..... **$19.95**
48-1921TP AC Fan • 120V AC @ 0.10A, 10W. 2700 RPM, 36 CFM. 3.62" x 3.62" x 0.984"d..... **$19.95**
48-1923TP AC Fan • 120V AC @ 0.07A, 6W. 1700 RPM, 21 CFM. 3.62" x 3.62" x 0.984"d..... **$19.95**
48-2921P DC Brushless Fan • 12V DC @ 0.13A, 1.6W. 2300 RPM, 23 CFM. 3.62" x 3.62" x 0.984"d **$19.95**
48-2923P DC Brushless Fan • 12V DC @ 0.07A, 6W. 1700 RPM, 21 CFM. 3.62" x 3.62" x 0.984"d **$19.95**
48-3120P • 4.68" finger Guard Grill..... **$2.95**
48-3250P • 4 ft. AC cord with AC plug and fan plug **$2.95**



AIM Coax Strippers • Quick, clean preparation of coaxial cable without damage for installation of connectors. No guessing! Adjustable blades, 2 cuts in one motion.
Model 24-7735P for RG-58, RG-59, RG-62.....**$19.95**
Model 24-7736P for RG-59, RG-6, 8281 .....**19.95**
Model 24-7739P for RG-8, RG-11, RG-213 .....**29.95**

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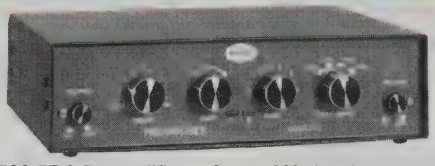
AMECO



AMECO PT-3 Preamplifier • Covers 160 thru 6 meters and usable useable with a receiver or transceiver. Tunable low noise dual gate FET circuit provides more than 20dB gain with low noise figure and improved spurious and image rejection. RF sensed switch with variable delay automatically bypasses to antenna on transmit. Second receiver and antenna capability. 12V DC. 2-1/2"h x 8-3/4"w x 6-1/2"d **$119.95**
P-12T • 12V DC power supply..... **$9.95**

AMECO TPA Tunable Preamp and Active Antenna • A dual function receiver accessory. May be used with an outside antenna as a tunable preamplifier with more than 20dB gain and low noise figure, or as an effective indoor active antenna using the built-in 30" collapsible whip. Covers 2 to 30 MHz in 5 bands. 9V DC. 2½"h x 8"w x 6½"d..... **$69.95**
PT-9T • 9V DC power supply..... **$9.50**

AMECO OCM-2 • A Code practice oscillator and CW monitor combination with volume control and quality 3 inch speaker. Requires a code key and 9V battery.
Kit $19.95 • Wired $24.95

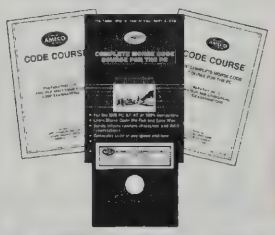
AMECO K-1 • Low-cost general purpose key with phenolic base, adjustable tension and contact spacing. **$5.95**

AMECO K-4 • Deluxe high quality key. Polished brass base,and shorting bar . **$10.95**

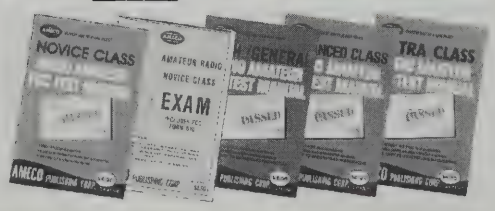
HP-300T

HP-75T

AMECO High Pass Filters • Stops TV, FM and VCR interference caused by harmonics and signal overload from amateur radio transmissions, etc. Easy installation at TV antenna input terminals or connector. Provides a sharp frequency cutoff at 52MHz with 70dB attenuation below 50MHz. Models for 75Ω or 300Ω TV antenna lead-ins or 75Ω cable systems. Order **Model HP-300T** (300Ω) or **HP-75T** (75Ω)..... **$12.95**

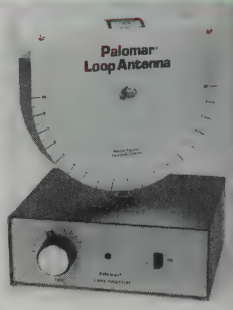


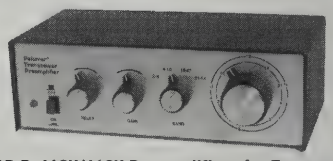
AMECO
Code Courses
License Guides
Test Manuals
See Price List



PALOMAR Engineers

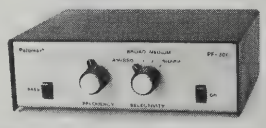
PALOMAR LA-1 VLF to 15MHZ Loop Antenna/20dB Amplifier
Ideal for receiver or VLF converter. Picks up less noise than other antennas. Choice of six plug-in loops for various frequency ranges rotate and tilt to produce sharp nulls that cancel interference and noise. 2-1/4" x. 7-1/4" x 6"..... **$99.95**
Choose loops for: 10-40kHz, 40-150kHz, 150-550KHz, 550-1600kHz, 1.6-5MHz or 5-15MHz ranges..... **each $89.95**

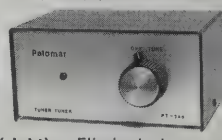




PALOMAR P-410X/412X Preamplifiers for Transceivers
Covers 160-6 meters in 4 ranges. Installs in-line between transceiver and antenna. Improves reception with adjustable gain up to 20dB, lower noise figure, better selectivity and overload capability. Automatic bypass switching to antenna on transmit with an adjustable delay from 1/10 to 3 seconds. 3"h x 8½"w x 5"d..... **P-410X** (115V) • **P-412X** (12V) **$169.95**

PALOMAR P-405/408 Receiver Preamplifiers
Similar to model shown above. Features same except for **receiver only** (no automatic bypass switching). Includes a two position antenna switch and switchable 20dB attenuator. Covers 1.8 to 54MHz, adds 20dB gain & additional selectivity.
P-405 (9V) **$139.95** • **P-408** (115V) **$149.95**





PALOMAR PT-340 Tuner-Tuner (right) • Eliminate tune-up QRM and possible damage to finals by adjusting your station antenna tuner without transmitting. Installs permanently between rig and antenna tuner. Simply turn it on, and by listening to the S-9+ noise output from the Tuner-Tuner in your receiver, and adjusting your tuner for a null, you can achieve the lowest SWR that your system is capable of. Covers 1.7- 30 MHz, up to 3KW. 9V battery *(not supplied)*. 6" x 5" x 3" .. **$99.95**
PALOMAR PF-300 Audio Filter (left) • Connects between receiver and headphones or speaker. Provides 16th order low-pass for SSB and 16 orderband pass for CW and digital. Broad (250Hz), Medium (100Hz) and Sharp (45Hz) selection, variable 300-3000Hz. 5W audio output, 13.8V DC **$149.95**

PALOMAR RX-100 Noise Bridge • One measurement can tell you if your antenna is resonant, and if not, whether it is too long or too short. Shows resistance and reactance values of all coax fed antennas 10-100MHz. To use, connect between receiver and feedline. Tune receiver to frequency and adjust bridge controls for a noise null and interpret the readings according to instructions. Useful for off-the-air tune-up of transmitters and tuners, and to adjust tuned circuit resonance. 9V battery *(not supplied)*. 5 ¾ " x 3" x 1¼" **$79.95**

PALOMAR VLF Converters • Converts VLF (10-500kHz) to 80 meters. Receives 1750 meter license-free band, navigation broadcasts, ship to shore, and European long wave broadcasts. **VLF-A** converts to 3510-4000KHz range for ham-band only receivers. **VLF-S** converts to 4010-4500kHz for general coverage receivers. On receivers with digital frequency readout, the last 3 digits read frequency directly. 9V battery *(not supplied)*. 2" x 4¼" x 5" .....**VLF-A** or **VLF-S** (specify) **$79.95**

Ahead of the Competition... ...Again.

Let Yaesu give you what the competition can only dream about: powerful features, simple operation and streamlined styling in one amazing package.

The new compact FT-415/815 handheld radios deliver more than a dozen new features, including backlit keypad and display, louder audio output and large, easy-access buttons. Both the FT-415 and FT-815 offer 41 memories, built-in DTMF calling and paging, and four power levels via the FNB-27 battery. As if that's not enough, you can customize your FT-415/815 handhelds with an array of optional accessories.

The competition is still working on a radio that's as powerful and easy to use as the FT-415/815 handhelds. But why wait? Visit your Yaesu dealer today and leap ahead of the competition.

Shown Actual Size

Specifications subject to change without notice.
Specifications guaranteed only within amateur bands.
Unit Year Limited Warranty on all Amateur Products.

FT-415/815

2M/UHF Handheld Transceivers

FT-415: 130-174 MHz Rx 140-150 MHz Tx

FT-815: 430-450 MHz Rx/Tx

41 Memories (All memories store separate transmit and receive frequencies for "odd splits")

2 VFOS

① DTMF Calling and paging built-in

Built-in VOX

② Back-lit Keypad and Display (with time delay)

③ DC Direct Operation (Automatically Charges Battery with 12 Volts, FNB-25 only)

④ Four Power Levels (With FNB-27 Battery)

Direct Keyboard Entry for All Functions

Programmable and Automatic Battery Saver (ABS)

⑤ CTCSS Encode/Decode Built-In

5 Watts Output With FNB-27 or DC Direct

⑥ Rugged Case Construction

Automatic Power-Off (APO) Turns Radio Off Automatically After 30 Minutes

DTMF 10 Memory Autodialer, Built-In

Selectable Frequency Steps (5,10, 12.5,15,20 or 25 KHz)

Four Ways to Scan (Band Scan, Memory Scan, Memory Skip, Programmable Scan)

Optional Accessories:

NC-42 1-Hour SMART Desk Charger

E-DC-5 DC Adapter With Noise Filter

MMB-49 Mobile Mounting Bracket

YH-2 Headset for VOX Operation

FBA-12 AA 6-Cell Holder

Some accessories and options are standard in certain areas. Check with your Yaesu Dealer for details.

YAESU

Performance without compromise.

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FT-530
Dual Band Handheld

- **Frequency Coverage:**
  2-Meters 130-174 MHz RX
  140-150 MHz TX
  70 cm 430-450 MHz RX/TX
- 82 Memories (41 per band)
- 4 TX Power levels
  w/FNB-25: 2.0, 1.5, 1.0, 0.5W
  w/FNB-27: 5.0, 3.0, 1.5, 0.5W
- Dual in-band receive feature (V/V, U/U or V/U receive operation)
- DTMF Paging and Coded squelch included.
- AOT – Auto On-Timer with built-in clock
- ABS – Automatic Battery Saver (Super battery life, each band can have separate battery saver)
- Built-in VOX
- IBS – Intelligent Band Select (provides automatic TX band select on scan stop)
- Built-in CTCSS with dual decode
- ATS – Automatic Tone Search (displays incoming CTCSS frequency)
- Back-lit keypad and display with time delay
- Built-in cross-band repeat function
- APO – Automatic Power Off
- 5 Watts output w/ FNB-27 battery or 12 VDC
- 2 VFO's for each band
- **Accessories:**

NC-42	1-hour Desk Charger
FNB-25	600 mAh Battery (2 watt)
FNB-26	1000 mAh Battery (2 watt)
FNB-27	600 mAh Battery (5 watt)
FBA-12	6 AA Cell Holder
CSC-56	Vinyl Case w/ FNB-25
CSC-58	Vinyl Case w/ FNB-26/27
E-DC-5	12 VDC Adaptor
YH-2	Headset for VOX
MH-12A2B	Speaker Mic
MH-18A2B	Lapel Speaker Mic
MH-19A2B	Mini Earpiece Mic
MH-29A2B	LCD Display Mic with Remote Functions
MMB-54	Mobile Mounting Hanger

"Look at this new FT-530! Simultaneous receive on VHF and UHF, automatic "on" timer, 82 memory channels..."

"Yaesu did it again!'

Bright minds lead to brilliant "firsts."

That's right, brilliant innovative first-time ever features which make the FT-530 our most exciting HT addition.

Exclusive break-through features, too. Like flexible in-band dual receive. Not just V/U receive. With the FT-530 you can listen to two, 2-meter signals at the same time!

Another remarkable first is the Auto On-Timer℠. Here's how it works. Choose the hour you'd like the radio to begin operating. For example, set the time for the morning, then wake up to your favorite net. What's more, the built-in 24-hour clock displays the time when the radio is off.

First out with 82 memory channels included, not an option; a real plus for storing all your favorite frequencies. With this HT, just open the box and QSO.

There's a lot of other terrific features too, such as built-in VOX and DTMF paging. And, since we know you'll find the FT-530 indispensable, we've included an automatic battery saver and voltage display – a powerful handful of exclusive features!

Be the first at your dealer's door to buy one, and the first to show off your new FT-530. What a bright idea!

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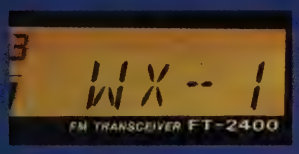
Specifications subject to change without notice. Specifications guaranteed only within amateur bands. Some accessories and/or options are standard in certain areas. Check with your local Yaesu dealer for specific details.

FT-2400 Military Spec'd TOUGH

NOTHING COMPARES...

Whether you're roughing it on the tortuous dirt roads of the Baja 1000 or through the big city canyons, the ruggedly designed FT-2400 is built to take the abuse. In fact, the FT-2400 is the first and only amateur radio to be awarded a MIL-STD-810 rating for the shock and vibration. That's why Yaesu is the official radio of the Nissan off-road race teams.



Exceptional features are packed into the FT-2400 such as: ■ **LCD Display**—the largest display available on any 2 meter mobile ■ **Alpha Numeric**—for entering names or callsigns ■ **Backlit DTMF Microphone**—for making autopatch calls safely at night ■ **31 Memories** ■ **Odd Splits**—on any memory channel ■ **3 Selectable Power Level Outputs**—50, 25 and 5 watts or user select ■ **Advance Track Tuning (ATT)**—eliminates big city intermod ■ **Automatic Display Dimmer**—4 levels ■ **FM Modulation**—for true voice clarity ■ **DTMF Selective Paging (optional).**

Other features include: Wideband receiver coverage 140-174 MHz RX, 140-150 MHz TX • CTCSS encode built-in and selectable from the front panel • Five scanning functions: Band Scan, Limited Band Scan, Memory Scan, Memory Channel Lock-out with Selectable Scan Stops and Priority Scans • One piece die-cast construction with extra large heat sink • Automatic Repeater offset • Programmable call channel.

Options: DTMF coded squelch and paging (requires FRC-6 paging unit) • CTCSS Decode Unit (FTS-17A).

If you're serious about affordable communications, you'll want the FT-2400. Contact your Yaesu dealer today.

YAESU

Performance without compromise.™

One Year Limited Warranty on all Amateur Radio Products. Specifications subject to change without notice.

Passed MIL-STD-810 Shock and Vibration Test

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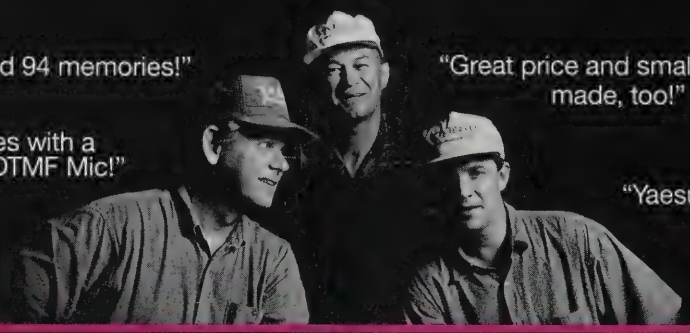
SHOWN ACTUAL SIZE

"Built-in duplexer and 94 memories!"

"Great price and smallest dual band made, too!"

"Comes with a backlit DTMF Mic!"

"Yaesu did it again!"



FT-5100
Dual Band Mobile

- **Frequency Coverage:**
  2M: 130-174 MHz RX
  140-150 MHz TX
  70 cm: 430-450 MHz RX/TX
- 94 Memories (47 per band) Odd Splits In Any Memory
- Dual in-band receive (V/V, U/U or V/U Receive Operation)
- DTMF Paging and Coded Squelch Included.
- Packet Radio TNC Jack Built-In To Back of Radio
- CTCSS Encode Built-In
- Dual Receive with Balance Control
- Full Duplex Cross Band Operation
- Built-In Antenna Duplexer
- Back Lit DTMF Microphone
- Automatic 8 Level Display Dimmer
- Built-In Cross Band Repeat
- RF Output Power:
  2M: 50/5 watt (high/low)
  70 cm: 35/5 watt (high/low)
- **Accessories:**
  FTS-22 CTCSS Dual Decoder
  SP-7 External Speaker
  MW-1 Wireless Microphone/ Controller

The ultimate definition of Dual Band.

Now you can listen to two, 2 meter frequencies, or two, UHF frequencies, at the same time with In-Band Dual Receive*. Although equipped with traditional dual band, Yaesu has taken receive two steps beyond in the remarkable FT-5100. Combined in one compact mobile transceiver, it's the ultimate meaning of "dual band".

With 94 memory channels – more than any other radio in it's class – and the optional MW-1 Wireless Mic, the flexibility of the FT-5100 is matchless. But to make sure the FT-5100 is complete, and an even better value, unlike the competition, there's a backlit DTMF mic included.

Through advanced miniaturization technology you'll find practical additions like the built-in antenna duplexer – an option on similar transceivers – and equally important, DTMF paging and coded squelch. All in the smallest dual band made!

Priced for the shrewd buyer, you've got to hear it to believe it. Dual band re-defined. Combinations like this can't be found anyplace else, so contact your nearest Yaesu dealer and tell him you want the "ultimate dual band". The FT-5100.

*In-Band Dual Receive available only on FT-5100.

Three Dual Receive Configurations

VHF/UHF

UHF/UHF

VHF/VHF

Dual band redefined.
And the choice is yours.
In-Band Dual Receive available only on FT-5100.

Here's another Yaesu exclusive!. The MW-1 Wireless Mic with Remote Control.

FT-5200. For those who don't want in-band dual receive, choose the security of the FT-5200 with it's quick-release front control panel (*not available on the FT-5100*). Comes with back-lit DTMF mic and built-in antenna duplexer.

YAESU

Performance without compromise.[SM]

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Specifications subject to change without notice. Specifications guaranteed only within amateur bands. Some accessories and/or options are standard in certain areas. Check with your local Yaesu dealer for specific details.

FT-5200/6200
Dual Band Mobiles

- **Frequency Range:**
  FT-5200
  2M: 140-174 MHz RX
  140-150 MHz TX
  70 cm: 430-450 MHz RX/TX
  FT-6200
  70 cm: 430-450 MHz RX/TX
  23 cm: 1240-1300 MHz RX/TX
- 32 Memories (16 per band)
  Odd splits on any memory
- CTCSS Encode Built-In
- Dual Receive with Balance Control
- Full Duplex Cross-Band Operation
- Built-In Antenna Duplexer
- Backlit DTMF Microphone
- Automatic 8 Level Display Dimmer
- Built-In Cross-Band Repeat
- **RF Output Power:**
  2M: 50/5 watt (high/low)
  70 cm: 35/5 watt (high/low)
  23 cm: 10/1 watt (high/low)
- **Accessories:**

FRC-4	DTMF Paging Unit
YSK-1L	20' Trunk Mounting Kit
FTS-22	CTCSS Dual Decoder
SP-7	External Speaker
DVS-3	Digital Voice Recorder Unit
MW-1	Wireless Microphone /Controller

"The FT-5200 is the smallest dual-band transceiver made, and I can mount it anyplace!"

"Yaesu did it again!"

What weighs 5 oz., lights up, snaps off and fits in your pocket?

Don't have the answer? Yaesu does. It's the exclusive removable front control panel of the FT-5200/6200 – the smallest, lowest priced dual-band mobile radios made.

With the use of the optional adjustable control panel bracket kit, you can conveniently mount the "smallest" control panel almost anyplace in your car and mount the transceiver body out of sight. When you leave your car, snap off the 5 oz. front control panel and take it with you. Now your rig's secure. For safer autopatch operation at night, you'll find another Yaesu exclusive – a back-lit DTMF mic. And there's also a built-in antenna duplexer and easy-to-read dual full-frequency liquid crystal display.

Now you have the answer, too. The FT-5200 – packed with features, affordably priced. Don't have one? Better contact your dealer today!

Here's another Yaesu exclusive! The MW-1 Wireless Mic with Remote Control.

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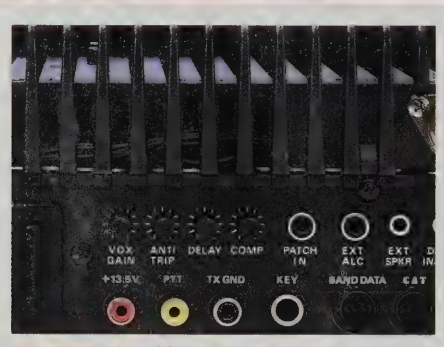
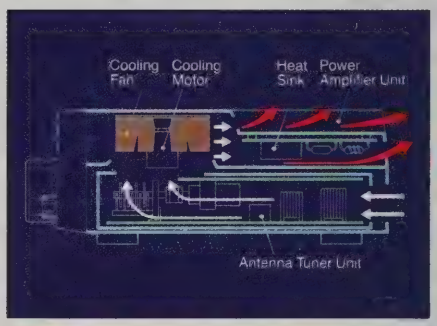
FT-890AT...Light Years Ahead.

World's Smallest With Built-in Antenna Tuner

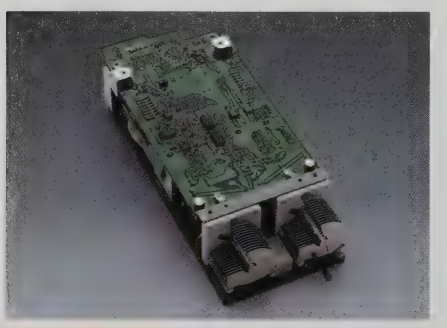


Rear Panel: Seldom used controls are located on rear panel allowing clean uncluttered front panel design.

Mobile Installation: The compact design and built-in antenna tuner makes the FT-890 a great mobile companion, using the optional mounting bracket kit (MMB-20).



DFCS (Duct Flow Cooling System): This unique system allows 100% duty cycle on FM and RTTY for up to 30 minutes of continuous transmission.



Antenna Tuner: High speed with 31 memories automatically stores most recent antenna matching settings for instant recall while changing operating frequencies.

Superior Performance

The FT-890 is an extraordinary achievement, featuring DLT (Digital Linear-phase Tuning) for silky smooth tuning. Including the advanced RF Front End design of the FT-1000 for superior receiving performance. Compare the advantages for yourself, it's ready to go when you are! Call your nearest Yaesu dealer for one of the best DX-pedition radios ever.

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Radio & Matching Power Supply: The FT-890 is ideal for home, mobile or field use with the optional power supply. Significantly smaller and lighter than competing units.

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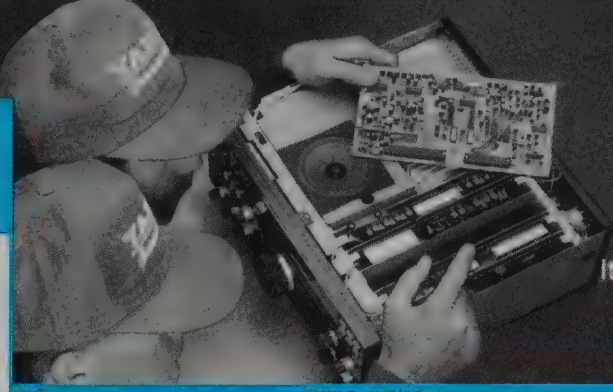
FT-990
All-Mode HF Transceiver

- **Frequency Coverage:** 100 kHz – 30 MHz RX (160-10 m TX)
- Built-in Dual Digital Switched Capacitance Filters
- Built-in High Speed Antenna Tuner w/39 Memories
- RF FSP (RF Frequency-Shifted Speech Processor)
- Dual VFOs with Direct Digital Synthesis (DDS)
- 90 Memories which store Frequency Mode and Bandwidth
- Full and Semi Break-in CW Operation
- Band Stacking VFO System
- Multi-mode Selection on Packet/RTTY; Easy interface to TNCs
- Adjustable RF Power
- Variable Threshold Noise Blanker
- Optional Digital Voice Recorder (DVS-2)
- Front Panel RX Antenna Selection
- **Accessories:**

FT-990DC	Available without power supply
XF-10.9M	2nd IF SSB Narrow 2.0 kHz Filter
XF-445K	2nd IF CW Narrow 250 Hz Filter
TCXO-2	High Stability TCXO
SP-6	External Desk-top Speaker
MD-1C8	Desk Microphone
DVS-2	Digital Voice Recorder Unit
YH-77ST	Lightweight Headphones
LL-5	Phone Patch Unit for SP-6 Speaker



"Yaesu did it again!'

"This is the only HF rig with a dual digital SCAF. It's incredible on a crowded band. Look inside, motherboard and plug-in board design. Un-be-liev-able!"

The innovative technology of the FT-990 is inside, not outside. Like the exclusive dual digital SCAF (Switched Capacitance Audio Filter). And for long term reliability, the motherboard/plug-in module construction eliminates inter-board wiring. The FT-990 also has the same undisputed receiver performance of the FT-1000 as well as other features such as a high-speed, built-in antenna tuner with automatic storage. And, multiple DDS (Direct Digital Synthesis) for quick lock-up time and low level noise. What's more, for maximum efficiency, the FT-990 is a self-contained base station with its space-saving, built-in AC power supply.

Outside, the very functional HF front panel is simple and uncluttered with a large amber display. Easy to use, easy to see. Pure and simple QSO enjoyment – with muscle when you need it! Yaesu makes "high-tech" effortless. Now it works for you, not against you. Have your dealer show you the FT-990 today and see what we mean.

NEW

FT-990DC now available.

YAESU

Performance without compromise.[SM]

High-tech innovation isn't miniature knobs, switches, and tiny labels.

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FT-1000
All Mode HF Transceiver

- RF Power Output: Up to 200 Watts
- True Cross-band Dual Receive: Two Large Tuning Knobs
- Front Panel RX Antenna Switch: For Beverage or Loop
- Direct Digital Synthesis (DDS)
- Automatic Antenna Tuner: Built-in, 30 Memories
- Frequency Range: 100kHz-30MHz (RX), 160-10 meters (TX)
- 100 Memories: Independent ATU and Mode/IF Filter Memory
- CW Spot and Two CW Key Jacks for Maximum Convenience
- Dynamic Range: 108 dB
- Optional Digital Voice Recorder (DVS-2): 16 Seconds Each RX/TX
- **Accessories:**

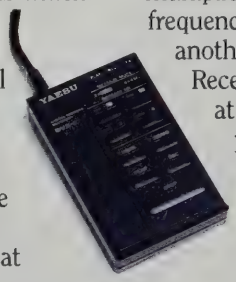
SP-5	External Desk-top Speaker
LL-5	Phone Patch Unit
MD-1C8	Desktop Microphone
YH-77ST	Stereo Headphones
FL-7000	500W Linear Amplifier
DVS-2	Digital Voice Recorder

Hear signals you've

You're a competitor. You want optimum receiver performance and you want "muscle" on transmit. With the FT-1000 you'll hear signals you've never heard before, and it's first with 200 watts – more power than any competing transceiver.

Recognized throughout the world by experts such as *Radio Communications* magazine in the UK for the FT-1000's "excellent top flight receiver", *cq DL* magazine in Germany for it's "hand warm" operation at maximum RF output, and the ARRL Lab which judged it "best overall", it's easy to see why the FT-1000 is the choice of top DX'ers all over the world.

A peerless combination for elite-class contesting and DX operation, these exclusive features will maximize your score: Dual Receive – mixed at audio for either mono or stereo monitoring, lets you watch a multiplier or new country on one frequency while running QSOs on another frequency or band; Diversity Reception – using two antennas at different heights or opposite polarizations; and Extensive Cascaded IF Filtering – for unmatched selectivity in those battles on "the low end". Outstanding front panel design features two



DVS-2 *Optional Digital Voice System provides instant playback.*

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never heard before.

large, flywheel-weighted tuning knobs for the two receivers, front panel RX antenna selector for quick switch to a spotting antenna and two large displays so you can see what's happening all the time. This is the type of practical design you'd expect from a world leader in radio communications.

The FT-1000 is the perfect blend of electronics and human engineering. It's the Best of our Best.

Contact your Yaesu dealer today and tell him you want the best, too. You want the FT-1000.

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The Dream Station[SM]

Our rotators keep

G-250
Light duty UHF, VHF, AM/FM and TV Antennas.

G-1000SDX
Medium-heavy duty HF and large VHF/UHF arrays; illuminated radial compass display; variable rotating speed with pre-sets.

G-2700SDX
Large tower-mounted antennas; illuminated radial compass display; variable rotating speed with pre-sets.

Not shown: G-400, G-800, G-800SDX

Specifications subject to change without notice. Some accessories and/or options are standard in certain areas. Check with your local Yaesu dealer for specific details.

YAESU G-250 • Light to medium duty for smaller amateur radio antennas and UHF/VHF, FM radio & TV arrays.

SPECIFICATIONS

Rotor diameter	6 in.
Rotor height	12½ in.
Max. antenna wind load	4 sq. ft.
Rotation torque	14 ft./lbs.
Stationary torque	43.3 ft./lbs.
360° rotation time	45 seconds
Mast diameter	1 to 1½ in.
Rotor cable required	6-wire
Shipping weight	8 lbs.
AES® Price	**$106.95**

YAESU G-1000SDX • Heavy-duty Deluxe, for Large HF arrays. 450° rotation with presets.

Rotor diameter	7½ in.
Rotor height	12½ in.
Max. antenna wind load	23 sq. ft.
Max. vertical load	1760 lbs.
Rotation torque	43 to 79 ft./lbs.
Stationary torque	433 ft./lbs.
450° rotation time	43 to 93 seconds
Mast diameter	1½ to 2½ in.
Rotor cable required	5-conductor
Shipping weight	19 lbs.
AES® Price	**$419.95**

YAESU G-2700SDX • Heavy-duty Deluxe (high-tech), for Very Large amateur arrays. 450° rotation with presets.

Rotor diameter	10 in.
Rotor height	14 in.
Max. antenna wind load	34 sq. ft.
Max. vert. load	880 lbs/1760 momentary
Braking torque	1736 ft./lbs.
Rotation torque	57.9 to 217 ft./lbs.
450° rotation time	40 to 120 seconds
Mast diameter	1⅞ to 2½ in.
Rotor cable	6-conductor
Shipping weight	30 lbs.
AES® Price	**$899.95**

Order Toll Free: 1-800-558-0411 ***FAX: (414) 358-3337***

AMATEUR ELECTRONIC SUPPLY® Inc.

5710 W. Good Hope Road; Milwaukee, WI 53223 • Phone (414) 358-0333

AES® BRANCH STORES

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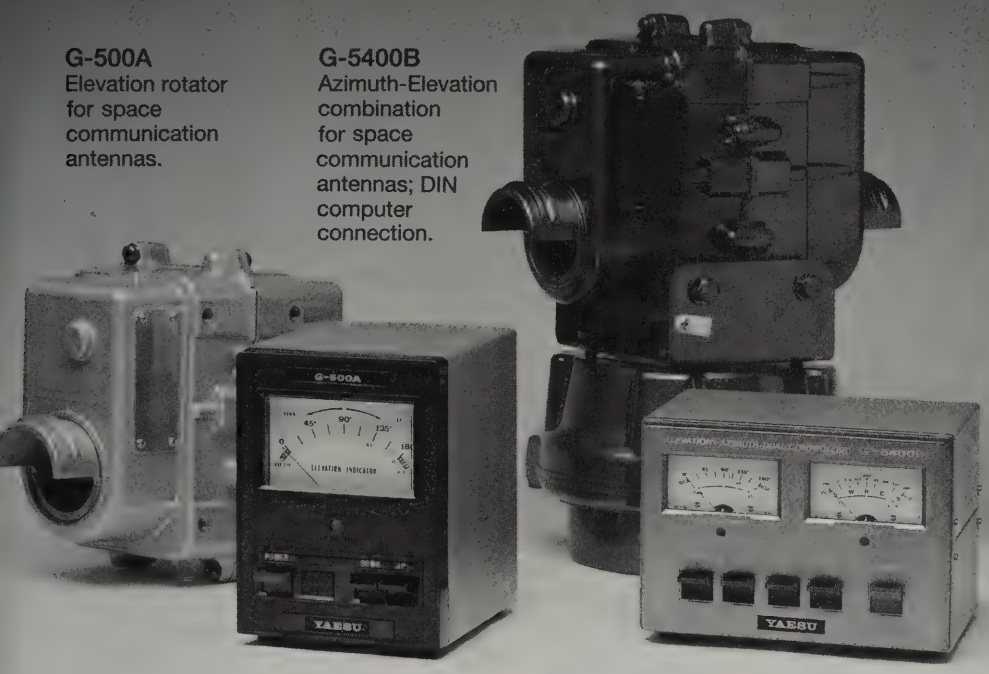
1-800-321-3594	1-800-327-1917	No Toll Free Line	1-800-634-6227

Watch for Future AES® Branch Store Openings!

you spinning.

G-500A
Elevation rotator for space communication antennas.

G-5400B
Azimuth-Elevation combination for space communication antennas; DIN computer connection.



For the best choice in rotators, and the only rotators manufactured by a major amateur radio manufacturer, see Yaesu!

Choose from antenna rotators capable of handling light-duty TV antennas to large HF arrays as well as Azimuth-Elevation combinations for satellite applications.

Yaesu rotators are designed for smooth and quiet operation without noisy wedge brakes that can irritate your neighbors and are housed in weatherproof, die-cast aluminum enclosures permanently lubricated for maintenance-free operation. And, they're compatible with most U.S. manufactured antenna tower accessory shelves. To insure maximum satisfaction, Yaesu rotators are backed by a One-Year Warranty and 35-plus years of radio communication engineering know-how.

Contact your Yaesu dealer for full details and specifications and keep your antennas spinning!

YAESU

Performance without compromise.℠

© 1992 Yaesu USA, 17210 Edwards Road, Cerritos, CA 90701 (310) 404-2700.

YAESU G-500A • Elevation rotator, for satellite earth station and other space communications antennas. 180° rotation

Rotor diameter	7½ in.
Rotor height	10½ in.
Max. antenna wind load	12 sq. ft.
Rotation torque	73 ft./lbs.
Stationary brake torque	144 ft./lbs.
180° El. rotation time	61 seconds
Mast diameter	1½ to 2½ in.
Boom diameter	1¼ to 1⅝ in.
Rotor cable required	6-conductor
Shipping weight	16 lbs
AES® Price	**$229.95**

YAESU G-5400B • Light/Medium duty Azimuth–Elevation rotator combo, for space communications antennas.

Rotor diameter	7½ in.
Rotor height	12½ in.
Max. antenna wind load	11 sq. ft.
Max. vertical load	440 lbs.
El. rotation torque	101 ft./lbs.
Az. rotation torque	44 ft./lbs.
El. Stationary brake torque	289 ft./lbs.
Az. Stationary brake torque	145 ft./lbs.
180° El. rotation time	58 seconds
360° Az. rotation time	61 seconds
Pointing accuracy	± 4%

G-5400B Specs Continued

Mast diameter	2 to 2½ in.
Boom diameter	1¼ to 1⅝ in.
Rotor cables required	2 runs of 6-cond.

TIP: If 8-wire rotor cable is used for G-5400B, the extra wires may be used as DC pairs for polarization shift, preamps, etc.

Shipping weight	32 lbs.
AES® Price	**$449.95**

YAESU ANTENNA ROTATORS

MasterCard VISA DISCOVER AMERICAN EXPRESS

other YAESU Rotators

YAESU G-400RC (left) • Light/medium-duty for small HF & medium to large-size UHF, VHF, FM radio & TV antennas.

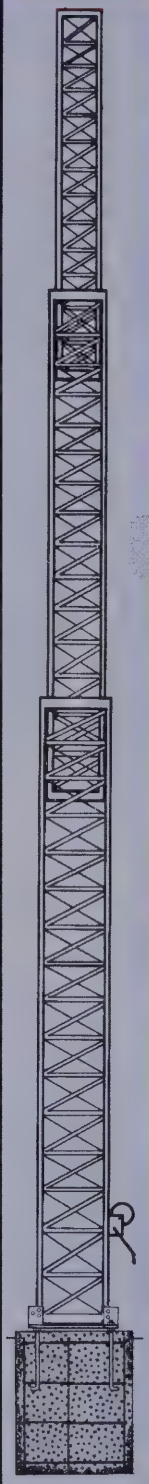
Rotor diameter	7½ in.
Rotor height	11½ in.
Max. antenna wind load	11 sq. ft.
Rotation torque	43.3 ft./lbs.
Stationary torque	145 ft./lbs.
360° rotation time	50 seconds
Mast diameter	1½ to 2½ in.
Rotor cable required	5-conductor
Shipping weight	17 lbs.
AES® Price	**$219.95**

YAESU G-800S • Medium/heavy-duty for medium/large HF arrays. Looks like G-1000SDX above. **G-800SDX** has variable speed and preset controls.

Rotor diameter	7½ in.
Rotor height	12½ in.
Max. antenna wind load	21 sq. ft.
Rotation torque	43-79 ft./lbs.
Stationary torque	288 ft./lbs.
450° rotation	(S) 55 sec, (SDX) 43-93 sec.
Mast diameter	1½ to 2½ in.
Rotor cable required	5-conductor
Shipping weight	17 lbs.
AES® Price	(S) **$289.95** (SDX) **$349.95**

US TOWER CORPORATION

Full line of Accessories including: **• Tower Motor Drives • 5' to 24' Antenna Masts • 20' Chromolly Masts • Thrust Bearings • Mast Raising Fixtures • Rotating bases • Coax arms • Limit Switch Packages**



MA SERIES (CRANK-UP TUBULAR TOWERS

Will handle 10 sq. ft. antennas at 50 MPH winds.

MODEL NO.	HEIGHT MAX.	HEIGHT MIN.	NUMBER SECTIONS	WT #	SECTION OD Top	SECTION OD Bot.	BASE SIZE	AES PRICE
MA-40	40 ft.	21'6"	2	242	3" sq.	4½"	1'x1'x1'	**$629**
MA-550	55 ft.	22'1"	3	435	3" sq.	6"	1½'x1½'x1½'	**$999**
MA-550MDP*	55 ft.	22'1"	3	620	3" sq.	6"	3'x3'x4'	**$2618**
MA-770	71 ft.	22'10"	4	645	3" sq.	8"	3'x3'x5'6"	**$2258**
MA-770MDP*	71 ft.	22'10"	4	880	3" sq.	8"	3'x3'x5'6"	**$3572**
MA-850MDP*	85 ft.	23'6"	5	1128	3" sq.	10"	3'x3'x4'	**$4814**

Standard bases and eve mounts included with all towers (except MA-770, 770-MDP and 850-MDP) • MDP models complete with heavy-duty motor drive with positive pull down.

FREE STANDING CRANK-UP TOWERS

Will handle 18 sq. ft. antennas at 50 MPH winds.

MODEL NO.	HEIGHT MAX.	HEIGHT MIN.	NUMBER SECTIONS	WT #	SECTION OD Top	SECTION OD Bot.	BASE SIZE	AES PRICE
TX-438	38 ft.	22"	2	355	12½"	15"	3'x3'x5'	**$917**
TX-455	55 ft.	22	3	670	12½ "	18"	3'x3'x6'	**$1385**
TX-472	72 ft.	22'8"	4	1040	12½"	21⅝"	4'x4'x7'	**$2276**
TX-472MDP*	72 ft.	22'8"	4	1210	12½"	21⅝"	4'x4'x7'	**$3662**
TX-489	89 ft.	23'4"	5	1590	12½"	25⅝"	4'x4'x7'	**$3959**
TX-489MDPL*	89 ft.	23'4"	5	1800	12½"	25⅝"	4'x3'x7'	**$5939**

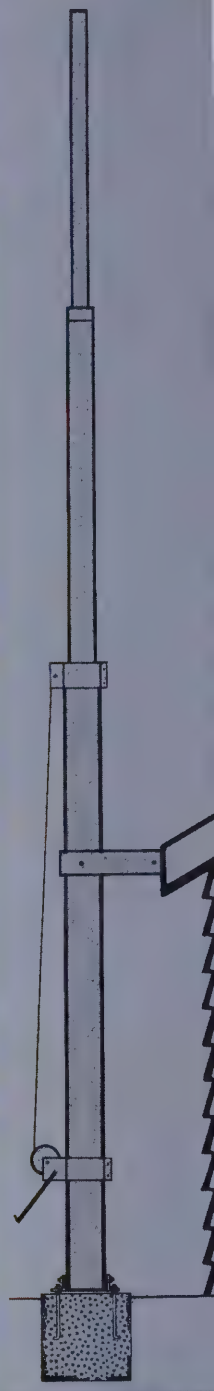
*TX-472MDP includes heavy duty motor drive with positive pull down. TX-489MDPL comes with heavy duty motor drive with dual level wind and positive pull down. MDPL models include fully operational limit switch packages.

FREE STANDING HEAVY-DUTY CRANK-UP TOWERS

Will handle 30 sq. ft. antennas at 50 MPH winds.

MODEL NO.	HEIGHT MAX.	HEIGHT MIN.	NUMBER SECTIONS	WT #	SECTION OD Top	SECTION OD Bot.	BASE SIZE	AES PRICE
HDX-538	38 ft	21'6"	2	600	15"	18"	3'x3'x6'	**$1187**
HDX-555	55 ft	22'	3	870	15"	21⅝"	4'x4'x6'	**$2078**
HDX-572	72 ft	22'8"	4	1420	15"	25⅝"	4'x4'x7'	**$3563**
HDX-572MDPL*	72 ft.	22'8'	4	1600	15"	25⅝"	4'x4'x7'	**$5444**
HDX-589MDPL*	89 ft.	23'8"	5	2440	15"	30⅝ "	5'x5'x7½'	**$7127**
HDX-689MDPL*	89 ft.	23'8"	5	3450	18"	37⅛"	5'x5'x9½'	**$15,299**
HDX-5106MDPL*	106 ft.	24'8"	6	3700	15"	37⅛"	5'x5'x9½'	**$16,649**

*Includes heavy-duty motor drives with dual level wind and positive pull down. MDLP models include fully operational limit switch packages. *HDX-689MDPL rated 60 sq. ft. of antenna at 50 mph winds. * HDX-5106MDPL rated at 35 sq. ft. of antenna at 50 mph winds.

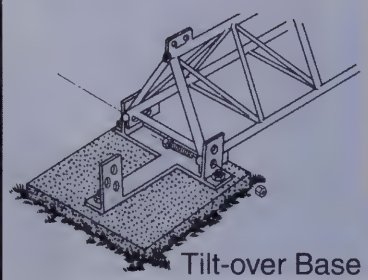


Complete list of accessories shown in the Price List

FREE STANDING "Low Profile" COMPACT CRANK-UP TOWERS

Will handle 18 sq. ft. antennas at 50 MPH winds. (TMM-443HD - 24 Sq. ft.)

MODEL NO.	HEIGHT MAX.	HEIGHT MIN.	NUMBER SECTIONS	WT #	SECTION OD Top	SECTION OD Bot.	BASE SIZE	AES PRICE
TMM-433S*	33 ft.	11'4"	4	315	10"	18"	3'x3'x4'	**$980**
TM-433HD	33 ft.	11'4"	4	400	12½"	20⅞"	3'x3'x5'	**$1187**
TMM-541SS	41 ft."	12'	5	430	10'	20⅞"	3'x3'x4½'	**$1286**



Tilt-over Base

You may obtain a detailed U.S. Tower Catalog by sending a request and $1.00 to Amateur Electronic Supply • 5710 W. Good Hope Road. Milwaukee, WI 53223

Towers & Rotors

ALUMA TOWER

Lightweight (but very strong) all aluminum crank-up towers are perfect for Ham operation. They provide safety and convenience during antenna installationor making changes or adjustments. Models available up to 70 ft. with several installation options and extras. **See Price List**.

ROHN

Heavy Duty or Extra Heavy Duty for HAM RADIO applications

Rugged, all Steel Construction • "X" Brace for greater strength • Galvanized finish for long life • Tower can be fully assembled on the ground and hinged up, or built vertically, section by section • Load is rated for Free Standing, no guy wires* • Supplied with Base Stubs for concrete mounting, and Rotator Plate.

See Price List

Model	Ht.	Windload	Weight
HBX-40	40 ft.	10 sq. ft.	228 lbs
HBX-48	48 ft.	10 sq. ft.	303 lbs
HBX-56	56 ft.	10 sq. ft.	385 lbs
HDBX-40	40 ft.	18 sq. ft.	281 lbs
HDBX-48	48 ft.	18 sq. ft.	363 lbs

***IMPORTANT:** ROHN states that "antennas developing a large twisting moment due to wind must not be used on these towers". Antennas should be limited to those having a maximum boom length of not more than 10 ft.

U.S. TOWERS

A large selection of Self-Supporting Crank-up towers for almost any height and strength requirement. Three compact models **(TMM-series)**, six standard models **(TX-series)**, and five heavy-duty models **(HDX-series)** Also seven tubular crank-up models **(MA-series)**. Plus, a full complement of accessories for various installations. **See Price List**

UNIVERSAL

UNIVERSAL Model 18-50
50 ft. self-supporting aluminum tower shown installed at the QTH of **W9NHE** in Milwaukee Wisconsin

FREE STANDING ALUMINUM TOWERS
LIGHTWEIGHT • RUST FREE
EASY TO ASSEMBLE & INSTALL
RUGGED • HAM RADIO,TV/FM

Configurations available from 30-100 ft. with various wind load selections to meet almost any application. Self-Supporting – no need for unsightly guy wires at rated load. **See Price List.**

ALLIANCE

Low Cost **Antenna Rotor**

Heavy Duty • Designed for antennas with up to 10.7 sq. ft. of wind surface area when mounted in-tower, also may be mounted on tower, or on 1⅜" to 2½" masts – with reduced windload rating. Heavy pitch steel gears, 100 ball bearings. **Dual Speed:** One-RPM or *s-l-o-w* for precise aiming; automatic brake. Big 3½" lighted azimuth meter clearly calibrated from S-W-N-E-S in 5° increments. Use 8-wire cable **$169.95**

Special YAESU Rotors

See the YAESU rotor display on pages 74 and 75

G-5400B Combination *Elevation/Azimuth* Rotor • For satellite, moonbounce and other space communications work where both horizontal and vertical rotation of the antenna is required in a single unit. Full 180° rotation. Elevation rotation time: 58 seconds; 360°. Azimuth rotation time: 50 seconds. Handles 440 lbs of vertical load and mast diameters from 2" to 2½" Control box has large dual meters which show separate azimuth and elevation indication with a ±4% aiming accuracy. Uses 8 wire control cable **$449.95**

G-500A Elevation Rotor (right) • 180° elevation rotation takes 60 seconds, large meter – aiming accuracy ±3%. Accepts boom diameters 1¼" to 1⅝". Uses 8-wire control cable .**$229.95**

PHILLIPS ECG

Model U-105 Antenna Rotator
$69.95

TB-105 Mast Mount Thrust Bearing • $18.25

One-piece cast aluminum housing designed for greatest strength in high stress areas, uses precision cut, hardened steel gears. Large bearing surfaces and reinforced mast support for lateral loads and ball bearing for thrust (vertical load). Easily handles small VHF/UHF amateur and TV/FM arrays. Water tight , fully lubricated drive train. Control unit is smooth and quiet, and is synchronized with the drive unit by synchronous motors. Full 360° rotation with mechanical stop; 70 seconds. rotation time; 8 ft./lbs of torque; 100 lbs. vertical load capacity; 1–1⅛" support mast size; weight - 10 lbs.; control size 7"w x 5⅞ "d x 2⅜ "h. Optional Thrust Bearing mounts on mast, above rotor for extra support.

HY-GAIN Rotors

AR-40 (lightweight) • For large TV/FM and smaller Ham Antennas up to 3.0 sq. ft. windload area when mounted in-tower, or 1.5 sq. ft. mast mounted with supplied lower support bracket. Rotor unit: 17⅜"h x 8" diameter, 12 ball bearings (two races), disc brake, mast sizes up to 2⅛" diameter. Automatic, silent control box - just dial and touch for desired direction. Uses 5-wire control cable. 14 lbs .....(305) **$199.95**

CD-45-II (medium duty) • For antennas with up to 8.5 sq. ft. windload area when mounted in-tower, or 5 sq. ft. when mast mounted with supplied lower support bracket. Rotor unit: 17⅜"h x 8" diameter, 48 ball bearings (two races), disc brake, mast sizes up to 2⅛" diameter. Illuminated directional indicator, separate snap action brake and rotation switches. Meter face may be reversed for north or south center scale, as desired. Uses 8-wire control cable. 20 lbs .....(302) **$279.95**

HAM IV (Heavy Duty) • For medium-sized antenna arrays with a windload area up to 15 sq. ft. when mounted in-tower, or 7.5 sq. ft. when mast mounted with *optional* lower support bracket. Rotor unit: 13½"h x 8" diameter, 98 ball bearings (two races), electric locking steel wedge brake. Mast sizes up to 2⅛" diameter. Illuminated indicator, separate snap action brake and rotation switches, north or south center scale - in unit. Use 8-wire control cable. 24 lbs.....(304) **$369.95**

T²X Tailtwister (Extra Heavy Duty) • For larger antenna arrays with a windload area up to 20 sq. ft. when mounted in-tower, or 10 sq. ft. when mast mounted with *optional* lower support bracket. Rotor unit: Extra rugged casting - 14⅛"h x 9⅝" diameter, 138 ball bearings (3 races), electric locking steel wedge brake. Mast sizes up to 2⅛" diameter. Illuminated directional indicator, separate snap action brake and rotation control switches, north or south center scale - in unit. Use 8-wire control cable. 28 lbs. .....(303) **$429.95**

HDR-300 Deluxe Extra HD
For large antenna arrays up to 25 sq. ft. windload **(in-tower mount only)**. Rotor: 7"x 9" x 10"h, 138 ball bearings (3 races), solenoid operated locking brake. Masts up to 3" in dia. Digital directional indicator accurate to 1°. Separate brake & rotation controls. 8-wire cable. 55 lbs.(300) **$949.95**

Recommended Rotor Control Cable:

BELDEN 8484 • 4-wire
BELDEN 8485 • 5-wire
BELDEN 8448 • 8-wire
BELDEN 9405 • 8-wire (HD for big rotors, long runs)

See BELDEN in the Price List

COMET T.M.

This catalog represents the absolute latest, and most diverse Multi-band Antennas available to the modern Amateur Radio Operator. We're confident you will find a COMET Antenna or accessory that will enable you to enjoy Amateur Radio to its fullest.

COMET developed the Super Linear Converter (SLC) to increase the actual gain of Dual/Triband antennas.

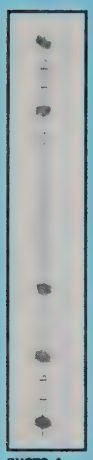


PHOTO A

1) A completely pre-formed phasing coil and phosphorus copper element eliminates additional components, and gain loss. (Photo A)

2) COMET sectional antennas use threaded ABS (Transparent to RF) connecting joints for the finest radiation pattern and easiest assembly. (Photo B,C)

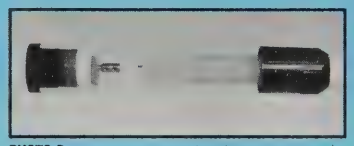
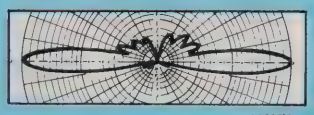


PHOTO B

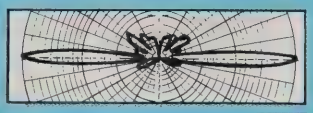
PHOTO C

3) The SLC is electrically very efficient, providing a low angle of radiation directly to the horizon, for maximum performance.

Radiation Pattern



146MHz



446MHz

GPX-2010

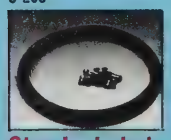
The Highest Gain 2M/70cm Omni-directional vertical in the World!

146MHz 9.5dB 446MHz 13.2dB

GPX-2010

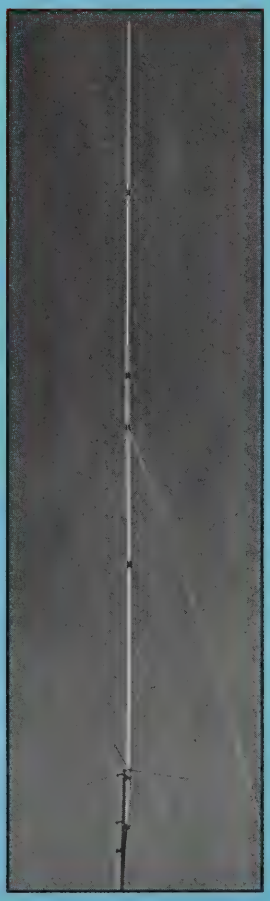
Gain & Wave:
146MHz 9.5dB 5/8 wave x 5
446MHz 13.2dB 5/8 wave x 12
VSWR: 1.5:1 or less
Max Power: 200 watts
Length: 23' 4"
Weight: 7 lbs. 14 ozs.
Mounting Mast Dia: 1 1/4-2 1/2"
Connector: UHF

S-203

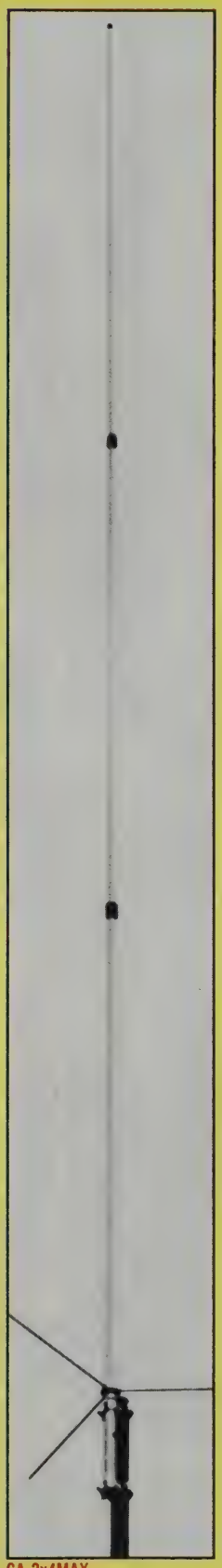


Stay Included

The GPX-2010 will support itself and withstand winds to 65MPH. Non-Metal guys are included for additional support.



DUAL-BAND BASE AND REPEATER ANTENNAS



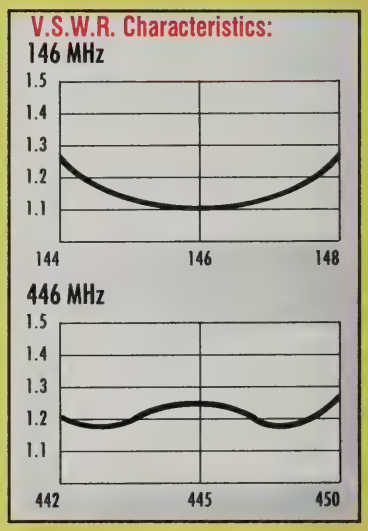
CA-2x4MAX

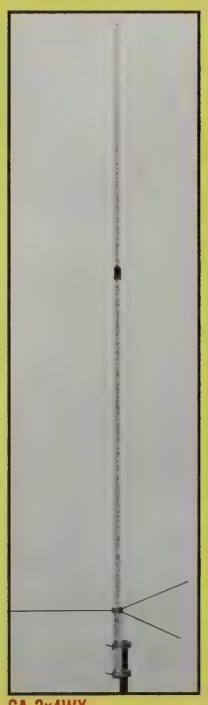
Gain & Wave:
146MHz 8.5dB 5/8 wave x 3
446MHz 11.9dB 5/8 wave x 8
VSWR: 1.5:1 or less
Max Power: 200 watts
Length: 17' 8"
Weight: 5 lbs. 11 ozs.
Mounts to Mast Size: 1 1/4-2 1/2"
Connector: SO-239

CA-2x4MAX

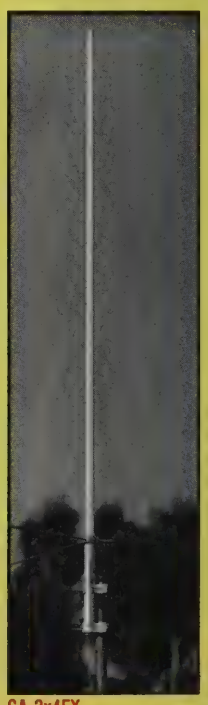
COMET'S best selling 2M/70cm Fixed-Station antenna.

Featuring the COMET exclusive SLC System for maximum gain, and stable resonant frequencies. Wide band, and like all COMET Antennas, pre-tuned. Heavy-Duty fiberglass and a compression washer within the ABS connecting joint prevents moisture/pollution contamination. Simply use the included stainless steel mounting brackets and your mast, and you're ready to experience incredible COMET DualBand Performance!





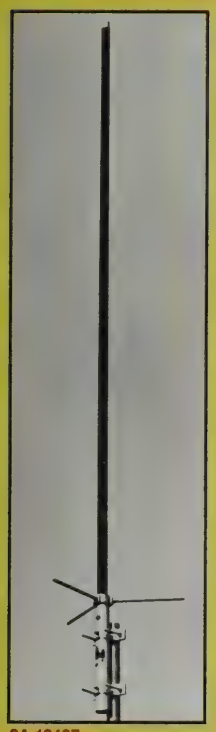
CA-2x4WX
Dual-Band 146/446MHz SLC System
Gain & Wave:
146MHz 6.5dB 5/8 wave x 2
446MHz 9.0dB 5/8 wave x 5
VSWR: Less than 1.5:1, 144-148MHz 440-450MHz
Max Power: 200 watts
Length: 10' 2"
Connector: SO-239
Construction: Heavy Duty Fiberglass, 2 Sections



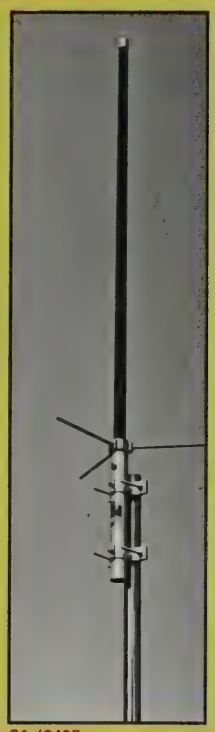
CA-2x4FX
Dual-Band 146/446MHz Base-Repeater Antenna
Gain: 146MHz 4.5dB 446MHz 7.2dB
VSWR: Less than 1.5:1, 144-148, 440-450MHz
Max Power: 200 watts
Length: 5' 11"
Weight: 2 lbs. 12 ozs.
Mounting Mast Dia: 1 1/2-2 1/4"
Connector: SO-239
Construction: Heavy Duty Fiberglass

COMET T.M.

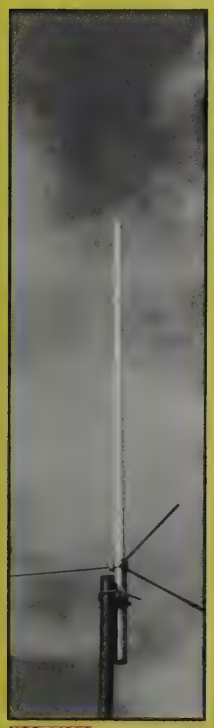
440/1200MHz Dual Band



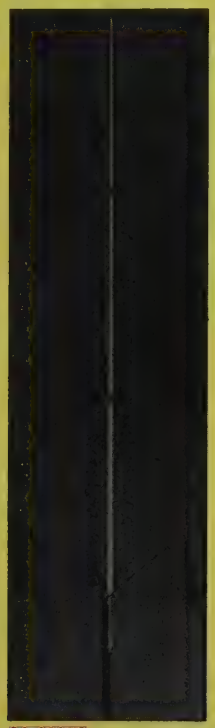
CA-1243Z
Dual-Band 446/1200MHz
Gain & Wave:
446MHz 9.4dBi 5/8 wave x 4
1200MHz 12.8dBi 5/8 wave x 9
VSWR: 1.5:1 or less
Max Power: 446MHz 150 watts, 1200MHz 50 watts
Length: 7'
Weight: 2 lbs. 8 ozs.
Connector: N-Type
Construction: Heavy Duty Fiberglass



CA-1243E
Dual-Band 446/1200MHz
Base-Repeater Atenna
Gain: 446MHz 6.0dBi, 1280MHz 8.4dBi
VSWR: 1.5:1 or less
Max Power: 446MHz 150 watts, 1200 MHz 50 watts
Length: 3' 4"
Weight: 1 lb. 13 ozs.
Mounting Mast Dia: 1 1/4-2 1/2"
Connector: N-Type
Construction: Heavy Duty Fiberglass



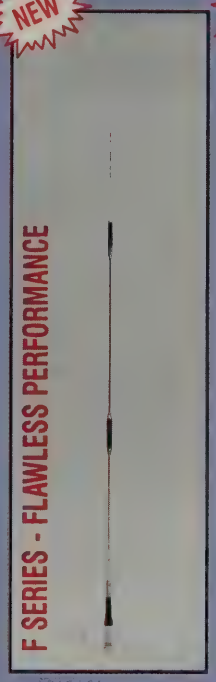
NCG-1422B
Dual-Band 146/220MHz
Base Antenna
Gain & Wave:
146MHz 2.15dBi 1/2 wave
220MHz 3.4dBi 5/8 wave
VSWR: 1.7:1 or less
Max Power: 200 watts
Length: 3' 8"
Weight: 2 lbs. 8 ozs.
Connector: SO-239
Construction: Fiberglass



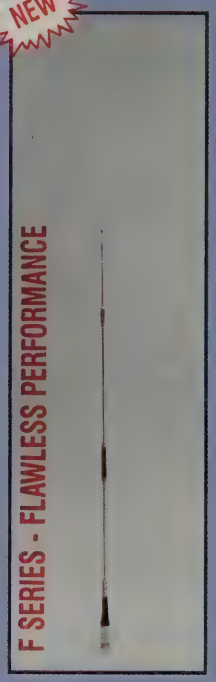
CA-3500B
Dual-Band Base-Repeater
28-29.7MHz, 50-52MHz
Gain: 2.15dB/6.5dB
Max Power: 200 watts SSB/100 watts FM
VSWR: 1.1.5 or less
Length: 21' 6"
Weight: 7.5 lbs.
Connector: SO-239
Max Wind Velocity: 70 mph
Construction: Heavy Duty Fiberglass

DUAL-BAND MOBILE ANTENNAS

NEW



NEW



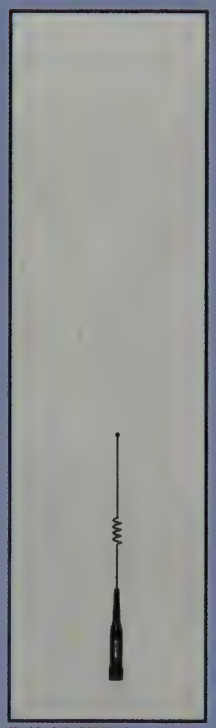
COMET'S Best Mobiles!
All stainless steel and 24kt gold plated center conductor, for ultimate performance and appearance!

FL-67S
Dual-Band 146/446MHz
w/Fold-Over
Gain & Wave:
146MHz 4.5dB 6/8 wave
446MHz 7.2dB 5/8 wave x 3
VSWR: 1.5:1 or less
Max Power: 150 watts
Length: 4' 11"
Connector: Gold Plated PL-259

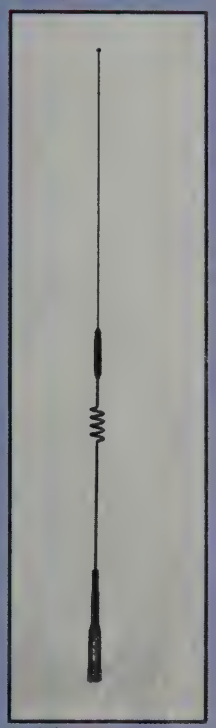
FL-62S
Dual-Band 146/446MHz
w/Fold-Over
Gain & Wave:
146MHz 3.5dB 1/2 wave
446MHz 6.0dB 5/8 wave x 2
VSWR: 1.5:1 or less
Max Power: 150 watts
Length: 3' 5"
Connector: Gold Plated PL-259

MORE DUAL-BAND ANTENNAS

NEW B SERIES
Black Anodized 2M/70cm

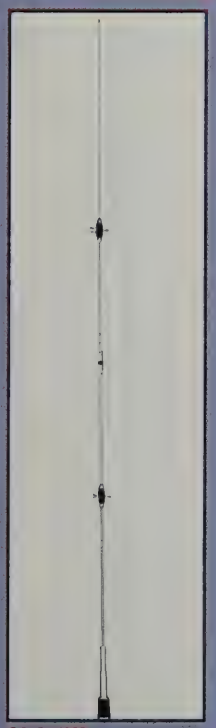


B-10 / B-10NMO
Dual-Band 146/446MHz
Gain & Wave:
146MHz –dB 1/4 Wave
446MHz 2.15dB 1/2 Wave
VSWR: Less than 1.5:1, 144-148MHz, 440-450MHz
Max Power: 50 Watts
Length: 12"
Connector: PL-259 or NMO Style
Construction: Black, Cellular Look-a-like



B-20 / B-20NMO
Dual-Band 146/446 MHz
Gain & Wave:
146MHz 2.15dB 1/2 Wave
446MHz 5.0dB 5/8 Wave x 2
VSWR: Less than 1.5:1, 144-148MHz 440-450MHz
Max Power: 50 Watts
Length: 30"
Connector: PL-259 or NMO Style
Construction: Black, w/Fold-Over

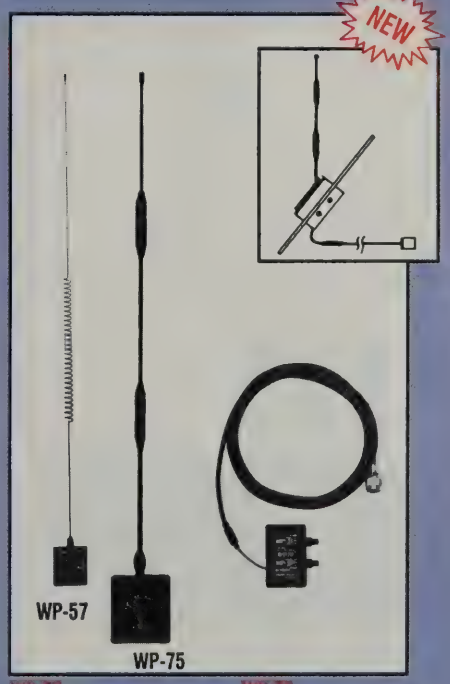
Economical & High-Gain



CA-2x4MB
Dual-Band 146/446MHz
w/Fold-over Base
Gain & Wave:
146MHz 4.5dB 7/8 wave
446MHz 7.0dB 5/8 wave x 3
VSWR: 1.5:1 or less
Max Power: 150 watts
Length: 4' 10"
Connector: PL-259

CA-2x4SR
Dual-Band 146/446MHz
w/Fold-over Base
Gain & Wave:
146MHz 3.8dB 5/8 wave
446MHz 6.2dB 5/8 wave x 2
VSWR: 1.3:1 or less
Max Power: 150 watts
Length: 3' 4"
Connector: PL-259

NEW

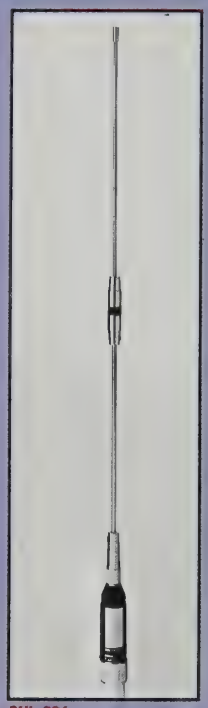


WP-57
Dual-Band 146/446MHz
On-Glass
Frequencies & Gain:
144-148MHz 2.15dBi
430-450MHz 5.2dBi
VSWR: 1.5:1 or less
Max Power: 30 watts FM
Element Length: 26" Cellular Appearance
Connector: PL-259
*Control Box w/independent tuner on each band provides SWR adjustments.
*Includes 12 ft high quality coax.

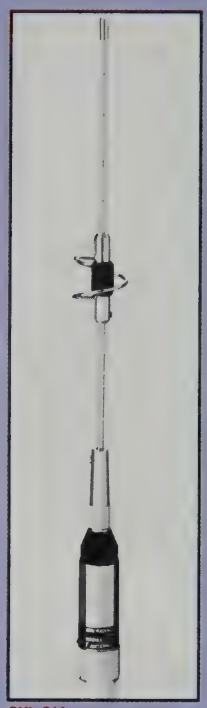
WP-75
Dual-Band 446/1200MHz
On-Glass
Frequencies & Gain:
430-450MHz 4.9dBi
1240-1300MHz 6.5dBi
VSWR: 1.5:1 or less
Max Power: 30 watts FM
Element Length: 18"
Connector:
WP-75N N-Connector
WP-75B BNC Connector
*Control Box w/independent tuner on each band provides SWR adjustments.
*Includes 12 ft high quality coax.

DUAL-BAND HT AND SCANNER ANTENNAS

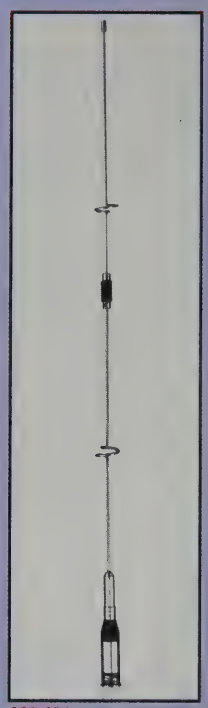
COMET T.M.



CHL-23J
Dual-Band 146/446MHz
Gain & Wave:
146MHz 2.15dBi 1/4 wave
446MHz 3.8dB 5/8 wave
VSWR: 1.5:1 or less
Max Power: 100 watts
Length: 18"
Connector: PL-259

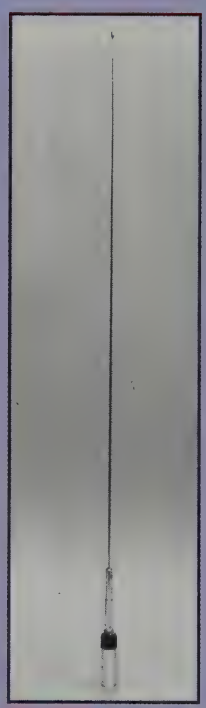


CHL-21J
Dual-Band 146/446MHz
Only 12" long, yet Dual-Band
Gain & Wave:
146MHz – 1/4 wave
446MHz 2.15dB 1/2 wave
VSWR: 1.5:1 or less
Max Power: 100 watts
Length: 12"
Connector: PL-259



CSR-024
Dual-Band 446/1200MHz
Mobile Antenna
Gain & Wave:
446MHz 4.1dB 5/8 wave
1200MHz 6.8dB 5/8 wave x 3
VSWR: 1.5:1 or less
Max Power: 50 watts
Length: 1' 10"
Connector: N-Type

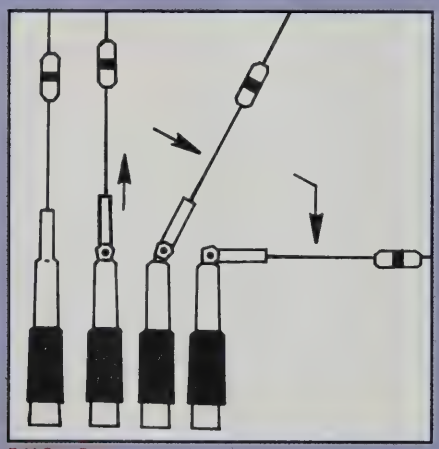
CHL-350
Dual-Band Mobile
28-29.7MHz, 50-52MHz
Gain & Wave:
28MHz – 1/4 wave
50MHz 2.15 1/2 wave
Max Power: 200 watts
SSB/100 watts FM
VSWR: 1:1.5 or less
Length: 7'
Weight: 1.5 lbs.
Connector: PL-259



NCG-1422M
Dual-Band 146/220MHz
Mobile Antenna w/Fold-over
Gain & Wave:
146MHz 2.15dBi 1/2 wave
220MHz 3.4dBi 5/8 wave
VSWR: 1.7:1 or less
Max Power: 100 watts
Length: 3'
Connector: PL-259

CA-214W
Dual-Band 146/220MHz
Mobile Antenna w/Fold-over
Gain & Wave:
146MHz 1.7dB 1/2 wave
446MHz 3.4dBi 5/8 wave
VSWR: 1.5:1 or less
Max Power: 100 watts
Length: 2' 11"
Connector: PL-259

4

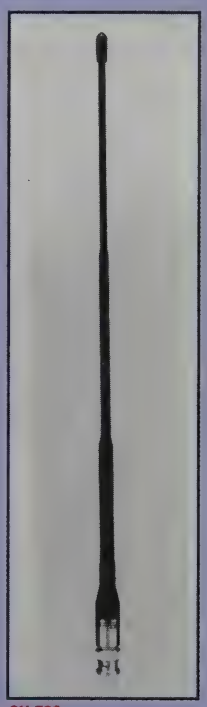


Fold-Over Base
Comet mobile antennas of length have this feature.

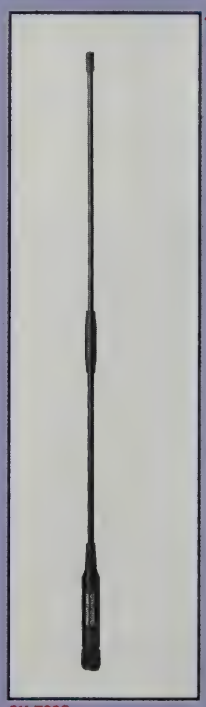
Pull up on lower element and fold the antenna over for entering garages, parking structures, etc. Do not drive with the antenna folded over.

NEW

CH-32
Miracle Baby 146/446MHz HT Antenna
Compact design, the smallest HT antenna available!
Gain & Wave: 0dB
VSWR: 1.5:1 or less
Max Power: 10 watts
Length: 1.75"
Connector: BNC

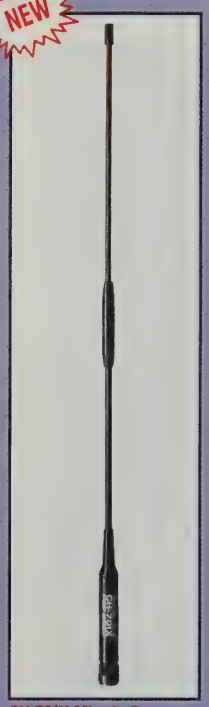


CH-72S
146/446MHz Flexible HT Antenna
Our BEST SELLER. Electrically very efficient.
Gain & Wave:
146MHz – 1/4 wave
446MHz 3.2dB 5/8 wave
VSWR: 1.5:1 or less
Max Power: 50 watts
Length: 15"
Connector: BNC



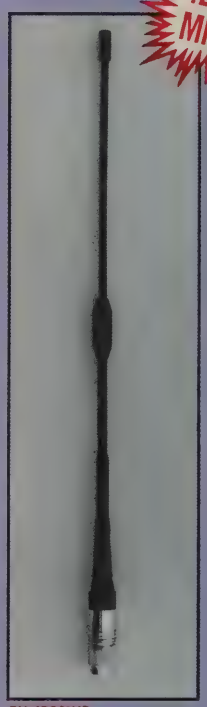
CH-720C
146/446MHz HT Antenna
Bottom section rigid, top flexible.
Gain & Wave:
146MHz – 1/4 wave
446MHz 3.8dB 5/8 wave
VSWR: 1.5:1 or less
Max Power: 50 watts
Length: 18"
Connector: BNC

NEW



CH-701X Miracle Boy
146/446/905MHz TX HT Antenna
5 Band RX Antenna:
144/300/440/800/900MHz
Bottom section rigid, top flexible.
Gain & Wave:
146MHz – 1/4 wave
446MHz 3.4dB 5/8 wave
900MHz 5.5dB 5/8 wave x 2
VSWR: 1.5:1 or less
Max Power: 10 watts
Length: 19"
Connector: BNC

1200 MHz



CH-1200WS
1200MHz HT Antenna
Bottom section rigid, top flexible.
Gain & Wave:
5.6dBi 5/8 wave x 2
VSWR: 1.5:1 or less
Max Power: 50 watts
Length: 13"
Conn: CH-1200WS TNC w/TNC
CH-1200WS BNC w/BNC

TRI-BAND MOBILE ANTENNA

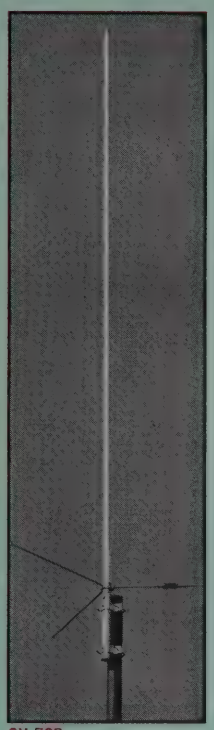
TRI-BAND BASE AND REPEATER ANTENNAS

COMET™

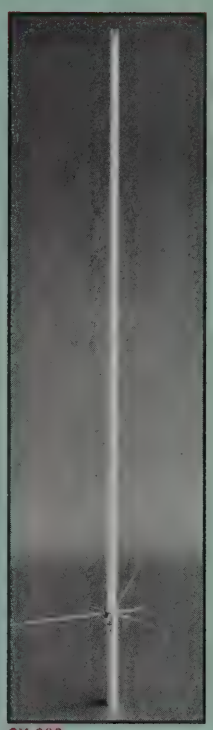
CX-801
Tri-Band Mobile Antenna
146/446/1200MHz
Gain & Wave:
146MHz 3dB 1/2 wave
446MHz 6.8dB 5/8 wave x 2
1200MHz 9.6dB 5/8 wave x 5
VSWR: 1.5:1 or less
Max Power: 100 watts
Length: 3' 3"
Connector: N-Type

NEW

FL-95SN
Tri-Band Mobile Antenna
146/446/1200MHz
Gain & Wave:
146MHz 2.8dB 1/2 wave
446MHz 6.0dB 5/8 wave x 2
1200MHz 8.4dB 5/8 wave x 4
VSWR: 1.5:1 or less
Max Power: 80 watts
Length: 2' 7"
Connector: N-Type



CX-725
Tri-Band
50/146/446MHz
Gain & Wave:
50MHz 2.15dB 1/2 wave
146MHz 6.2dB 5/8 wave x 2
446MHz 8.4dB 5/8 wave x 4
VSWR: 1.2:1 or less
Max Power: 200 watts
Length: 7' 6" **Weight:** 3 lbs.
Connector: SO-239
Construction: Fiberglass



CX-908
Tri-Band
144/435/905MHz
Gain & Wave:
144MHz 4.5dB 7/8 wave
435MHz 7.2dB 5/8 wave x 3
905MHz 10dB 5/8 wave x 6
VSWR: 1.5:1 or less
Max Power: 120 watts
Length: 5' 11" **Weight:** 2 lbs. 13 ozs.
Connector: N-Female
Construction: 1 Piece Fiberglass

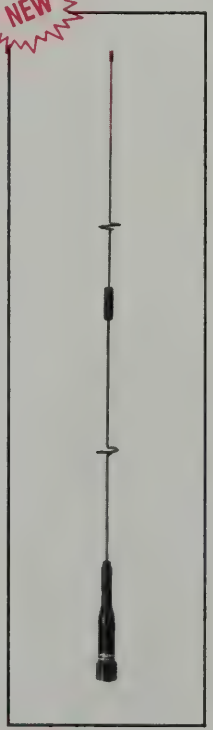
CX-903
Tri-Band 146/446/1200MHz
Gain & Wave:
146MHz 6.5dB 5/8 wave x 2
446MHz 9.0dB 5/8 wave x 5
1200MHz 13.5dB 5/8 wave x 12
VSWR: Less than 1.5:1,
144.5-147.5MHz, 440-450MHz,
1260-1300MHz
Max Power: 100 Watts
Length: 9'4" **Weight:** 3 lbs. 8 ozs.
Connector: N-Type
Construction: Heavy Duty Fiberglass, 2 sections

CX-902
Tri-Band 146/446/1200MHz
Gain & Wave:
146MHz 6.5dB 5/8 wave x 2
446MHz 9.0dB 5/8 wave x 5
1200MHz 9.0dB 5/8 wave x 5
VSWR: 1.5:1 or less
Max Power: 200 watts
Length: 10' **Weight:** 3 lbs. 3 ozs.
Mounting Mast Dia: 11/4-2 1/2"
Connector: N-Type
Construction: Fiberglass, 2 sections

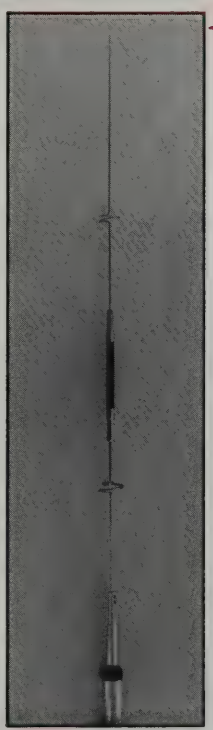
5

CH-600MX Miracle King
146/446/1200MHz TX Antenna
6 Band RX Antenna 144/300/
440/800/900/1200MHz bottom
section rigid, top flexible.
Gain & Wave:
146MHz – 1/4 wave
446MHz 3dB 5/8 wave
1200MHz 5.5dB 5/8 wave x 2
VSWR: 1.5:1 or less
Max Power: 10 watts
Length: 14.5"
Conn: CH-600MX TNC w/TNC
CH-600MX BNC w/BNC

NEW



FS-92B
Tri-Band Mobile Antenna BLACK
146/446/1200MHz
Gain & Wave:
146MHz 2.1dB 1/4 wave
446MHz 4.1dB 5/8 wave
1200MHz 6.8dB 5/8 wave x 3
VSWR: 1.5:1 or less
Max Power: 50 watts
Length: 23"
Connector: N-Type



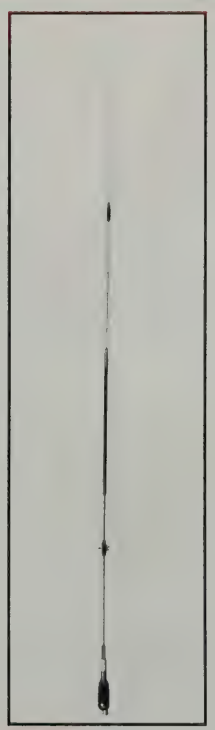
CX-809P
Dual-Band 2M/70cm + Cellular
146/446/835MHz (Cellular)
Gain & Wave:
146MHz 3dB 1/2 wave
446MHz 6dB 5/8 wave x 2
Cellular 8.4dB 5/8 wave x 4
VSWR: 1.5:1 or less
Max Power: 100 watts
Length: 2' 11"
Connector: N-Type

NEW

CX-224
Tri-Band 146/220/446MHz
The FIRST High-Gain
2M/220/70cm Mobile Antenna!!
Gain & Wave:
146MHz 2.15dB 1/2 wave
220MHz 3.6dB 5/8 wave
446MHz 6.0dB 5/8 wave x 2
VSWR: 1.5:1 or less
Max Power: 100 watts **Length:** 3'
Connector: CX-224 PL-259
CX-224NMO NMO Style

NEW

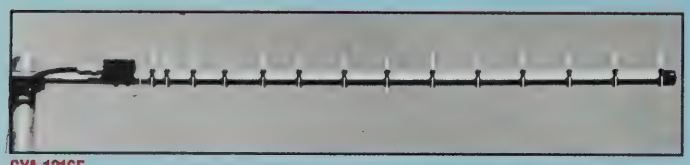
CA-HV
Quad-Band Mobile Antenna!
7, *14, 21, 28, 50, 146MHz
Gain & Wave:
HF 0dB
50MHz 2.15dB 1/4 wave,
146MHz 3.4dB 5/8 wave
VSWR: Less than 1.6:1
Weight: 14-19 ozs. (Max)
Length: 6'4" (Max)
Connector: PL-259
Construction: Heavy Duty, w/Fold-Over
*L-14 Optional 14MHz Coil for CA-HV



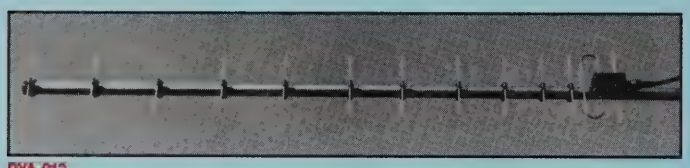
CX-702
Tri-Band Mobile
50/146/446MHz
Gain & Wave:
50MHz 2.15dB 1/2 wave
146MHz 6 dB 5/8 wave x 2
446MHz 8.4dB 5/8 wave x 4
VSWR: 1.5:1 or less
Max Power: 100 watts
Length: 6' 10"
Connector: PL-259

SINGLE-BAND BASE AND REPEATER ANTENNAS

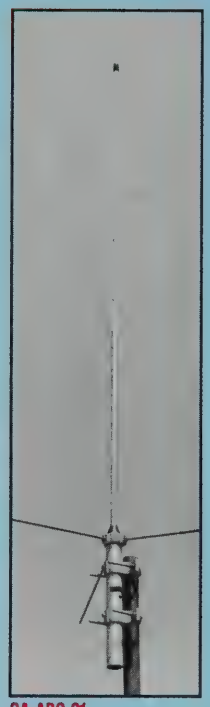
COMET™



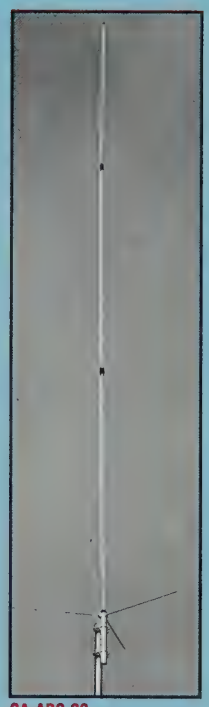
CYA-1216E
16 Element Yagi Beam
1260-1300MHz
Gain: 16.6dBi
VSWR: 1.5:1 or less
Max Power: 100 watts
Polarization: Vertical or Horizontal
Length: 4' 5"
Weight: 7 lbs. 11 ozs.
Mounting Mast Dia: 1'-2½"
Connector: N-Type
Construction: All Aluminum, pre-assembled



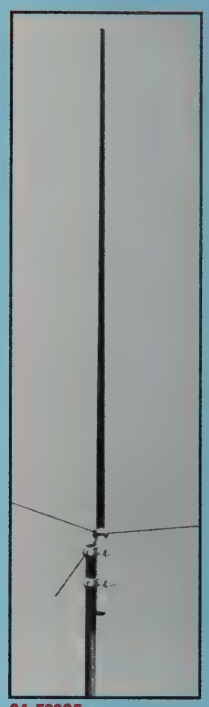
PYA-913
Base 13 Element Yagi
904-920MHz
Gain: 15.8dBi F/B ratio over 20dB
Max Power: 150 watts
VSWR: 1.5:1 or less
Length: 4' 8"
Connector: N-Type
Construction: Aluminum, pre-assembled



CA-ABC 21
Mono Band 146MHz
Base-Antenna
Condo/Apt Size
Gain & Wave: 3.4dB ⅝ wave
VSWR: 1.5:1 or less
Max Power: 200 watts
Length: 4' 7" **Weight:** 1 lb. 14 ozs.
Mounting Mast Dia: 1½-2¼"
Connector: SO-239
Construction: Aluminum

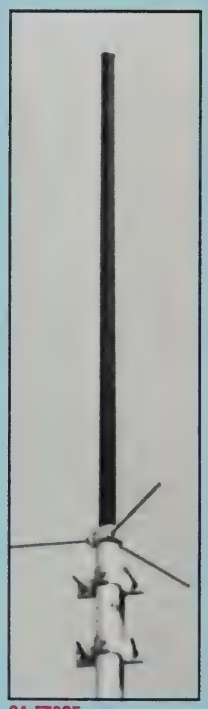


CA-ABC 23
Mono Band
146MHz Base-
Repeater Antenna
Gain & Wave:
146MHz 7.8dB ⅝ wave x 3
VSWR: 1.5:1 or less
Max Power: 200 watts
Length: 13' 4"
Weight: 3 lbs. 8 ozs.
Mounting Mast Dia: 1-2½"
Connector: SO-239
Construction: All Aluminum

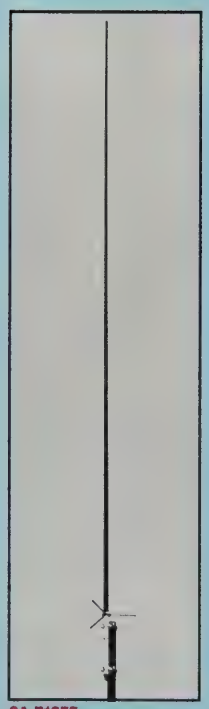


CA-F22GF
VHF Base Antenna w/Cutting Chart. User tunable for operation between 136-175MHz. After tuning, 4MHz Bandwidth.
Gain: 6.0dB
VSWR: 1.5:1 or less
Max Power: 150 watts
Length: 8' 10"
Weight: 2 lbs.
Mounting Mast Dia: 1½-2¼"
Connector: SO-239
Construction: Fiberglass

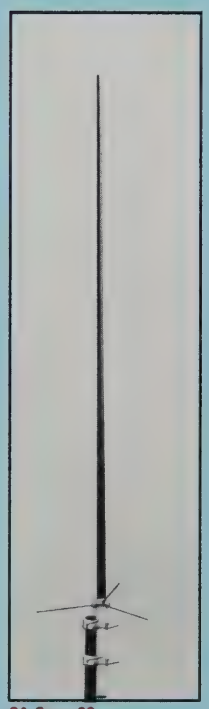
6



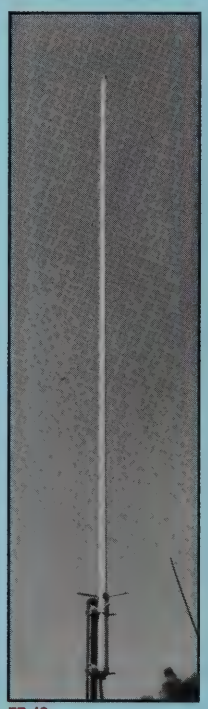
CA-F72GF
UHF Base Antenna w/Cutting Chart. User tunable for operation between 440-470MHz. After tuning, 10MHz Bandwidth.
Gain: 6.0dB
VSWR: 1.5:1 or less
Max Power: 150 watts
Length: 3' 6" **Weight:** 2 lbs.
Mounting Mast Dia: 1½-2¼"
Connector: N-Type
Construction: Fiberglass



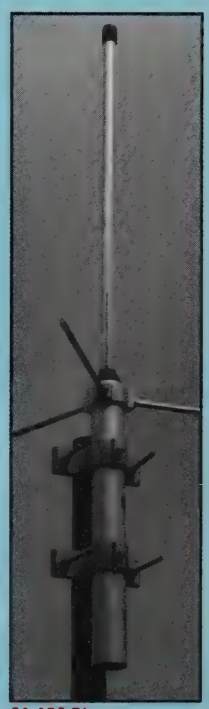
CA-712EF
Mono Band 440-450MHz
Base/Repeater
Gain & Wave:
446MHz 9dB ½ wave x 12
VSWR: 1.5:1 or less
Max Power: 200 watts
Length: 10' 5" **Weight:** 3 lbs.
Mounting Mast Dia: 1½-2½"
Connector: N-Type
Construction: Heavy Duty Fiberglass



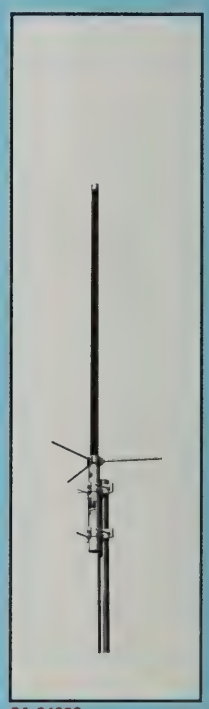
CA-Super22
220MHz Base/Repeater Antenna
Gain & Wave:
6.6dB ⅝ wave x 2
VSWR: 1.5:1 or less
Max Power: 150 watts
Length: 8' **Weight:** 2 lbs. 13 ozs.
Connector: SO-239
Construction: 1 Piece Fiberglass



FP-19
Base Repeater Antenna
905-925MHz
Gain: 16dBi
VSWR: 1.2:1 or less
Max Power: 100 watts
Length: 7' 4"
Connector: N-Type
Construction: Heavy Duty Fiberglass

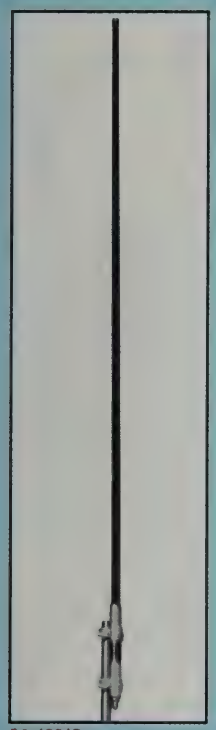


CA-ABC 71
Mono Band 446MHz
Base-Antenna
Condo/Apt Size
Gain & Wave: 3.4dB ⅝ wave
VSWR: 1.5:1 or less
Max Power: 200 watts
Length: 1' 9"
Weight: 1 lb. 3 ozs.
Mounting Mast Dia: 1½-2¼"
Connector: SO-239
Construction: Aluminum

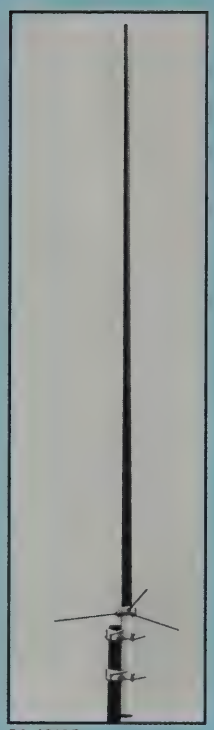


CA-2422S
Mono Band 2400MHz
Base-Repeater Antenna
Gain & Wave:
15.3dBi ½ wave x 22
VSWR: 1.5:1 or less
Max Power: 100 watts
Length: 4' 8" **Weight:** 2 lbs.
Connector: N-Type
Construction: Heavy Duty Fiberglass

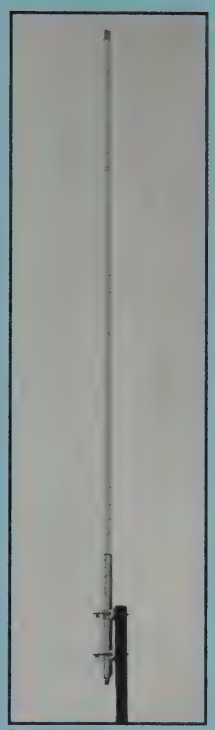
COMET T.M.



CA-1221S
Mono Band 1260-1300MHz
Base-Repeater Antenna
Gain & Wave:
14.8dBi 1/2 wave x 21
VSWR: 1.5:1 or less
Max Power: 100 watts
Length: 8' 6"
Weight: 2 lbs. 3 ozs.
Mounting Mast Dia: 1 1/4-2 1/2"
Connector: N-Type
Construction: Fiberglass

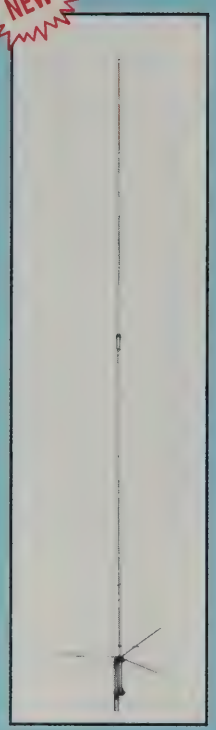


CA-1218G
Mono Band 1260-1300MHz
Heavy Duty
Gain & Wave:
12.0dBi 1/2 wave x 18
VSWR: 1.5:1 or less
Max Power: 100 watts
Length: 7' 1"
Weight: 3 lbs. 5 ozs.
Available Mast Dia: 1-2 1/4"
Connector: N-Type
Construction: Fiberglass, Heavy Duty



CMR-1215
1200MHz Repeater Antenna.
Super Heavy Duty,
135MPH Wind Survival
w/4 Degree Downtilt.
Gain & Wave:
11dBi 1/2 wave x 16
VSWR: 1.5:1 or less
Max Power: 100 watts
Length: 6' 10" **Weight:** 5 lbs. 10 ozs.
Connector: N-Type
Max Wind Speed: 135MPH
Construction: Heavy Duty
Single-Piece White Fiberglass.

NEW



CA-62DB
6 Meter Vertical
Gain & Wave:
52MHz 6.5dB 5/8 wave x 2
VSWR: 1.5:1 or less
Max Power: 500 watts SSB
Length: 21'
Weight: 5 lbs. 11 ozs.
Mounting Mast Dia: 1 1/4-2"
Max Wind Speed: 100MPH
Connector: SO-239
Construction: Heavy Duty Aluminum

All Comet Fixed-Station Base/ Repeater Antennas include stainless steel mounting brackets and hardware.

Lightening protected to guard your transceivers.

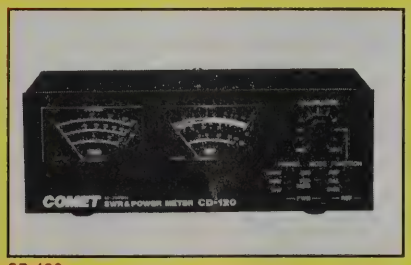
COMET Antennas represent the latest in antenna technology. We are confident you will enjoy using COMET Antennas, meters, mounts, and accessories.

SWR/POWER METERS

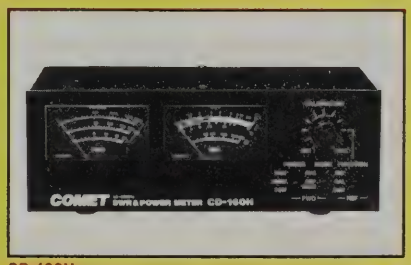
Measure and Monitor with Low Insertion Loss. Built-in PEP Monitor Accuracy. ±10% of Full Scale, Illuminated.

MINIMETERS
Simple Meters that directly read power and SWR. Ultra-Compact, Die-Cast, Sealed Case. HIGHLY PRECISE.

Model No.	Description
CM-200	Minimeter 140-150MHz
CM-300	Minimeter 220-240MHz
CM-400	Minimeter 430-450MHz
CM-400N	Minimeter 430-450MHz N-Conn
CM-420	Minimeter 140-150/430-450MHz
CM-420N	Minimeter 140-150/430-450MHz N-Conn
CM-900N	Minimeter 840-950MHz N-Conn
CM-1200N	Minimeter 1240-1300MHz N-Conn



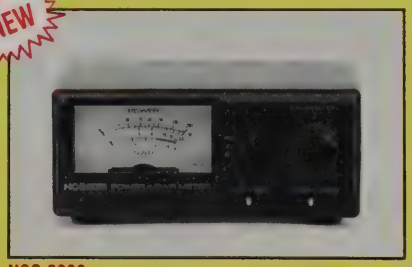
CD-120
SWR/POWER Meter
1.8-200MHz
Power Range: 15/60/200 watts
Insertion Loss: Less than 0.1dB
Connectors: SO-239
Impedance: 50 Ohms
Measures Forward AND Reflected Power.
Illuminated (requires power supply).



CD-160H
SWR/POWER Meter
1.6-60MHz
Power Range: 20/200/2KW
Insertion Loss: Less than 0.1dB
Connectors: SO-239
Impedance: 50 Ohms
Measures Forward AND Reflected Power.
Illuminated (requires power supply).

CD-270
SWR/POWER Meter
140-525MHz
Power Range: 15/60/200 watts
Insertion Loss:
140-250MHz Less than 0.1dB
400-470MHz Less than 0.25dB
525MHz Less than 0.3dB
Connectors: SO-239
Impedance: 50 Ohms
Measures Forward AND Reflected Power.
Illuminated (requires power supply).

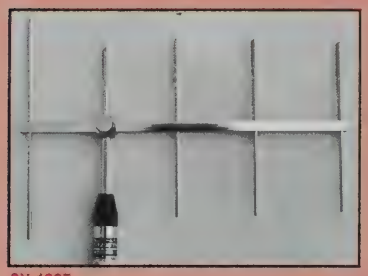
NEW



NCG 2000
SWR/POWER Meter 130-520MHz
Power Range: 50/200 Watt
Insertion Loss: Less than 0.5dB
Connectors: SO-239 50 Ohms
Accuracy: + – 10%
An economical, compact, in-line Power/SWR meter.

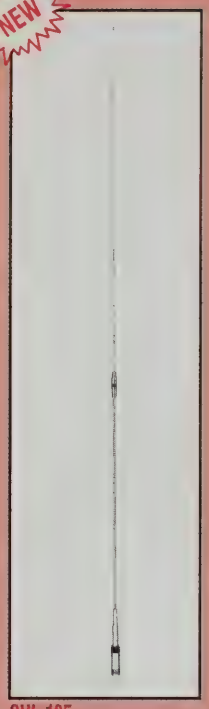
SINGLE-BAND MOBILE ANTENNAS

COMET T.M.



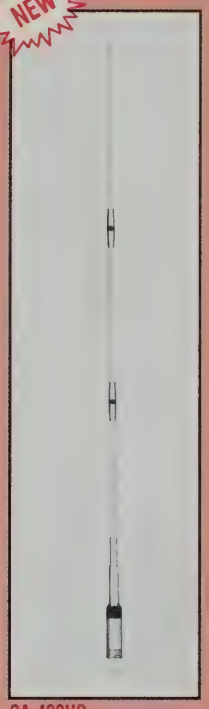
CY-1205
Mono Band 1280MHz
Mini Beam Antenna
for Hand Held
Gain: 11.0dB
VSWR: 1.5:1 or less
Max Power: 50 watts
Weight: 5.5 ozs.
Connector: CY-1205BNC w/BNC Connector
CY-1205TNC w/TNC Connector

NEW

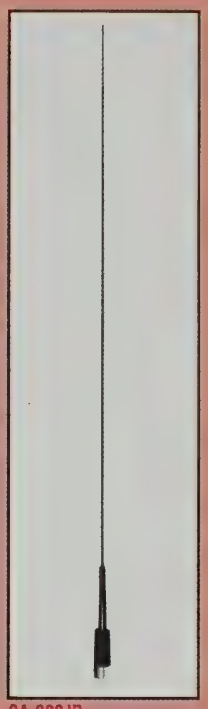


CHL-185
146 Mobile Antenna
Gain & Wave:
4.1dB 5/8 wave
VSWR: 1.5:1 or less
Max Power: 200 watts
Length: 4' 8"
Connector: PL-259

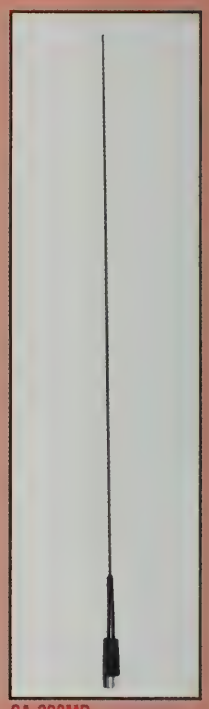
NEW



CA-430HG
446 Mobile Antenna
Gain & Wave:
5.0dB 9/8 wave
VSWR: 1.5:1 or less
Max Power: 100 watts
Length: 2' 4"
Connector: PL-259

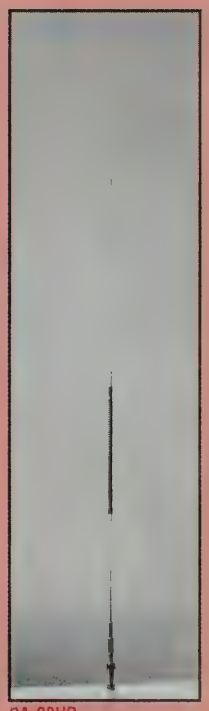


CA-220JR
Mobile Antenna
220-225MHz
Gain & Wave:
3.4dB 1/2 wave
VSWR: 1.5:1 or less
Max Power: 200 watts
Length: 2' 9"
Connector: PL-259



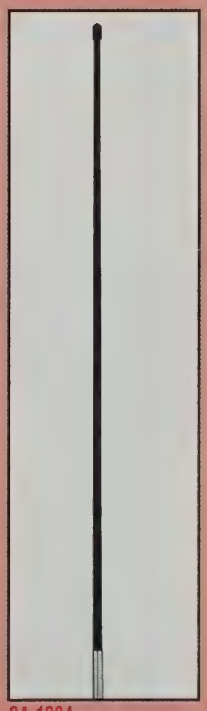
CA-220MR
Mobile Antenna
220-225MHz
Gain & Wave:
4.2dB 5/8 wave
VSWR: 1.5:1 or less
Max Power: 200 watts
Length: 3' 3"
Connector: PL-259

8



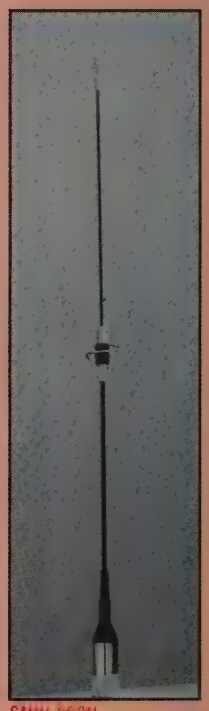
CA-28HR
10 Meter Mobile Antenna
Wavelength:
1/4 Wave
VSWR: Less than 2:1,
1.5:1 at Center Freq.
Max Power: 200 Watts SSB
Length: 7'
Connector: PL-259
Construction: Center Loaded
w/Fold-Over

CSR-12S
Mono Band 1260-1300MHz
Mobile
Gain & Wave:
6.8dB 5/8 wave x 3
VSWR: 1.5:1 or less
Max Power: 50 watts
Length: 1' 10"
Connector: N-Type



CA-1204
Mono Band 1260-1300MHz
Mobile 4 Step Collinear
Gain & Wave:
8.4dB 5/8 wave x 4
VSWR: 1.5:1 or less
Length: 2' 8"
Connector: N-Type
Construction: Fiberglass

CA-2405
Mono Band 2400MHz
Mobile Antenna
Gain & Wave:
7.0dB 1/2 wave x 15
VSWR: 1.5:1 or less
Max Power: 50 watts
Length: 17"
Connector: N-Type
Construction: Heavy Duty Fiberglass

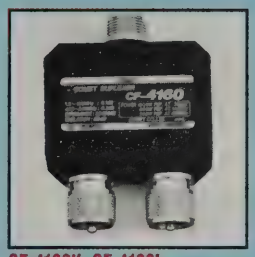


CMW-202N
Mobile Antenna
900-930MHz
Gain: 5.1dB
VSWR: 1.5:1 or less
Max Power: 50 watts
Length: 1' 6"
Connector: N-Type

DUPLEXERS

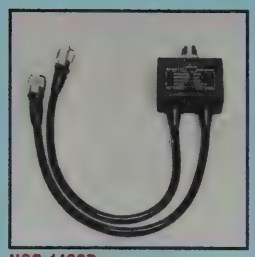
CF-416A, CF-416C
146/446MHz
Band Pass, Ins. Loss, Max Pwr.:
1.3-150MHz, 0.15dB, 800w PEP
400-540MHz, 0.25dB, 500w PEP
Isolation: 60dB
CONNECTORS:

	CF-416A	CF-416C
Output:	SO-239	N-Female
Low In:	PL-259	PL-259
High In:	PL-259	N-Male

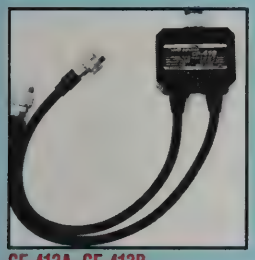


CF-4160K, CF-4160I
146/446MHz
Band Pass, Ins. Loss, Max Pwr.:
1.3-150MHz, 0.1dB, 800w PEP
400-540MHz, 0.2dB, 500w PEP
Isolation: 60dB
CONNECTORS:

	CF-4160K	CF-4160I
Output:	SO-239	SO-239
Low In:	PL-259	PL-259
High In:	PL-259	N-Male

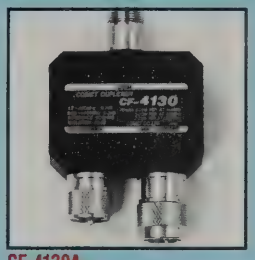


NCG-1422D
146/220MHz
Band Pass, Ins. Loss, Max Pwr.:
144-148MHz, 0.5dB, 100w FM
220-225MHz, 0.5dB, 100w FM
Isolation: 40dB
CONNECTORS:
Output: SO-239
Low In: PL-259
High In: PL-259

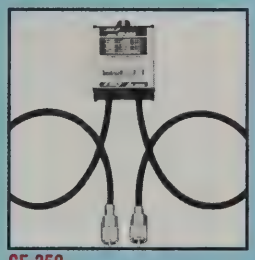


CF-413A, CF-413B
446/1200MHz
Band Pass, Ins. Loss, Max Pwr.:
1.3-150MHz, 0.25dB, 800w PEP
350-500MHz, 0.25dB, 500w PEP
840-1.4GHz, 0.4dB, 200w PEP
Isolation: 55dB
CONNECTORS:

	CF-413A	CF-413B
Output:	N-Female	N-Female
Low In:	N-Male	PL-259
High In:	N-Male	N-Male



CF-4130A
446/1200MHz
Band Pass, Ins. Loss, Max Pwr.:
1.3-150MHz, 0.2dB, 800w PEP
350-500MHz, 0.2dB, 500w PEP
840-1.4GHz, 0.3dB, 200w PEP
Isolation: 55dB
CONNECTORS:
Output: N-Female
Low In: N-Male
High In: N-Male

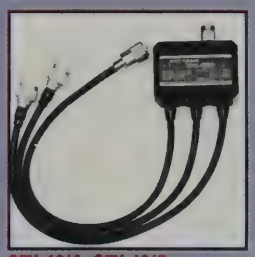


CF-350
28/50-240MHz
Band Pass, Ins. Loss, Max Pwr.:
1.3-30MHz, 0.2dB, 600w PEP
50-240MHz, 0.2dB, 600w PEP
Isolation: 40dB
CONNECTORS:
Output: SO-239
Low In: PL-259
High In: PL-259

CF-520
HF/446MHz
Band Pass, Ins. Loss, Max Pwr.:
1.3-56MHz, 0.2dB, 700w PEP
140-470MHz, 0.3dB, 600w PEP
Isolation: 40dB
CONNECTORS:
Output: SO-239
Low In: PL-259
High In: PL-259

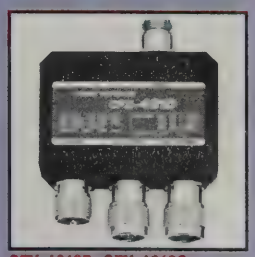
TRIPLEXERS

COMET™



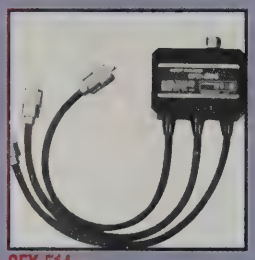
CFX-431A, CFX-431B
146/446/1200MHz
Band Pass, Ins. Loss, Max Pwr.:
1.3-60MHz, 0.2dB, 1000w PEP
100-150MHz, 0.2dB, 800w PEP
350-500MHz, 0.3dB, 500w PEP
840-1.4GHz, 0.4dB, 200w PEP
Isolation: 50dB
CONNECTORS:

	CFX-431A	CFX-431B
Output:	N-Female	N-Female
Low In:	PL-259	PL-259
Mid In:	N-Male	PL-259
High In:	N-Male	N-Male

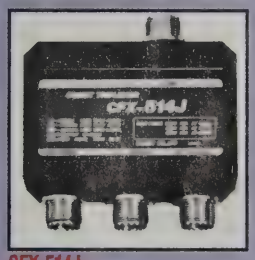


CFX-4310B, CFX-4310C
146/446/1200MHz
Band Pass, Ins. Loss, Max Pwr.:
1.3-60MHz, 0.15dB, 1000w PEP
100-150MHz, 0.25dB, 800w PEP
350-500MHz, 0.25dB, 500w PEP
840-1.4GHz, 0.3dB, 200w PEP
Isolation: 50dB
CONNECTORS:

	CFX-4310B	CFX-4310C
Output:	N-Female	N-Female
Low In:	PL-259	PL-259
Mid In:	N-Male	PL-259
High In:	N-Male	N-Male



CFX-514
50/146/446MHz
Band Pass, Ins. Loss, Max Pwr.:
1.3-90MHz, 0.2dB, 800w PEP
130-200MHz, 0.25dB, 800w PEP
380-500MHz, 0.3dB, 500w PEP
Isolation: 55dB
CONNECTORS:
Output: SO-239
Low In: PL-259
Mid In: PL-259
High In: PL-259

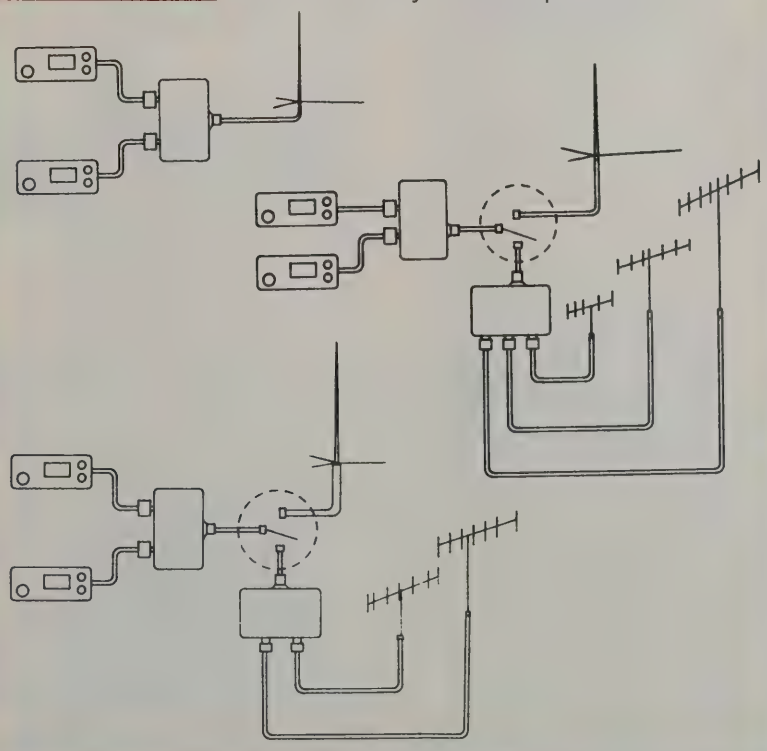


CFX-514J
50/146/446MHz
Band Pass, Ins. Loss, Max Pwr.:
1.3-90MHz, 0.15dB, 800w PEP
130-200MHz, 0.2dB, 800w PEP
380-500MHz, 0.25dB, 500w PEP
Isolation: 55dB
CONNECTORS:
Output: SO-239
Low In: SO-239
Mid In: SO-239
High In: SO-239

9

DIAGRAMS

The following illustrations demonstrate the wide uses of COMET Duplexers, Triplexers, and Coax Switches. Their High-Power capabilities and quality construction will enhance your stations performance.



NEW

CFX-324A and CFX-324B
146/220/446MHz Triplexer
Band Pass, Ins Loss, Max Pwr:
1.3-150MHz, 0.2dB, 600w PEP
200-320MHz, 0.25dB, 600w PEP
390-500MHz, 0.3dB, 600w PEP
Isolation: 40dB
CONNECTORS:

	CFX-324A	CFX-324B
Output:	SO-239	SO-239
Low In:	PL-259 w/Lead	PL-259 w/o Lead
Mid In:	PL-259 w/Lead	PL-259 w/o Lead
High In:	PL-259 w/Lead	PL-259 w/o Lead

NEW

CFX-324B

MOBILE MOUNTS

Detachable Connector
All Comet assemblies use this connector for easy installation.

COMET™

RS-81
Heavy duty trunk lip, hatchback mount. Rubber-coated base protects vehicle paint. 5 large set screws. Ratchet style dial lock.

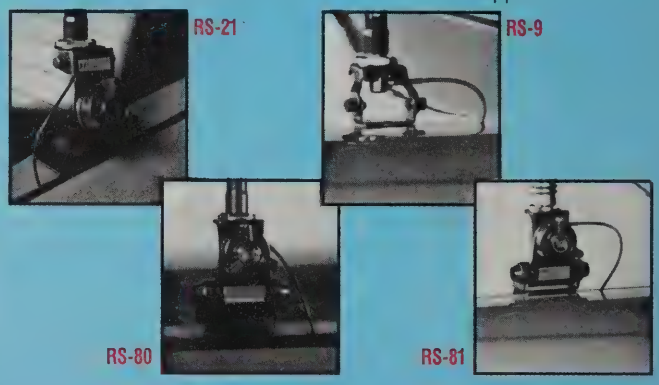
RS-21
Trunk, hatchback, rear door (van, blazer, etc.) mount. Adjustable to virtually ANY angle. Rubber-coated base protects vehicle paint.

RS-9
Small trunk-lip mount. Rubber-coated base, limited adjustment.

RS-25
Pipe clamp mount w/dial lock for luggage racks, ladders, etc. Can be mounted on vertical or horizontal pipe.

RS-80
Heavy duty gutter mount for tall antennas. Ratchet style dial lock allows antenna to be lowered while driving in low-clearance structures.

RS-20
Gutter mount for small-medium size antennas. Ratchet style dial lock allows the antenna to be lowered while driving in low-clearance structures.



MOBILE/BASE MOUNTS AND COAX ASSEMBLIES

3D4M Standard Cable Assembly
13.5 feet of low loss coax. Gold plated UHF (PL-259/SO-239) connectors.

3D4N Standard Cable Assembly
Standard cable assembly with N-Connectors. Recommended to 900MHz.

CK-5M Deluxe Cable Assembly
13 feet double shielded very low loss coax. + 12" RG-188 teflon coax. Gold-plated UHF (PL-259/SO-239) connectors. Allows easy entry from a lip-mount w/o causing coax or weather strip damage.

CK-5N Deluxe Cable Assembly
Deluxe cable assembly, but with N-Connectors.

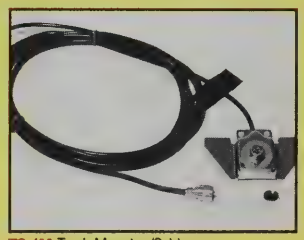
MS-3FVMM Standard Magnetic Mount
13.5 feet low loss coax, gold-plated UHF (PL-259/SO-239) connectors. 12 pole magnet, for antennas up to 45" tall.

MS-3FVNN Standard Magnetic Mount
Standard magnetic mount with N-Connectors.

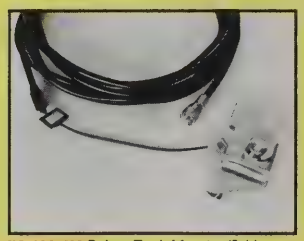
MS-5LXMM Deluxe Magnetic Mount
13 feet double shielded very low loss coax, + 12" RG-188 teflon coax. Gold-plated UHF (PL-259/SO-239) connectors. 12 pole magnet, max antenna height 45". Magnet may be removed and cable used as separate piece.

MS-5LXNN Deluxe Magnetic Mount
Deluxe magnetic mount, with N-Connectors.

Note: Coax cable and connectors are very important in providing good transmission conditions. An 8dB gain antenna easily becomes a 0dB gain antenna if inferior coax and cable is used. Please use Comet assemblies.

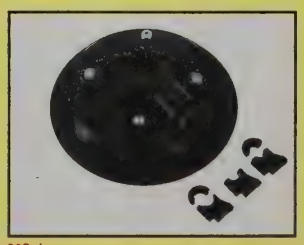


TS-1M Trunk Mount w/Cable
A low-profile trunk mount w/16.5 feet of cable included. Gold-plated UHF (PL-259/SO-239) connectors. Cam action allows vertical adjustment of antenna.



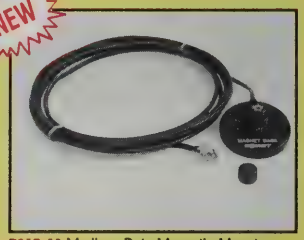
TS-106MM Deluxe Trunk Mount w/Cable
A low profile trunk mount w/16 feet very low loss cable, + 12" RG-188 teflon cable for easy trunk entry. Gold-plated UHF (PL-259/SO-239) connectors.

TS-106NN Deluxe Trunk Mount w/Cable
Deluxe trunk mount w/cable, with N-Connectors.



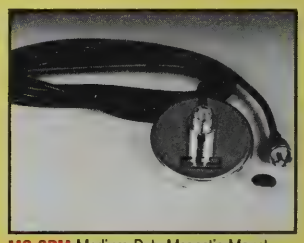
MS-1
Replacement magnet for MS Series Magnetic Mounts. Can be used with existing 3D4M, CK-5M, etc. cable assemblies to create a magnetic mount.

NEW



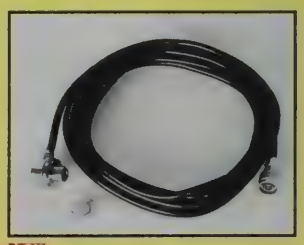
BMG-M Medium-Duty Magnetic Mount
Black magnet w/13.5 feet of low loss coax. Gold-plated UHF (PL-259/SO-239) connectors.

BMG-BB Medium-Duty Magnetic Mount
With BNC connector on the coax and magnet.



MG-SRM Medium-Duty Magnetic Mount
Chrome-plated magnet w/13.5 feet low loss coax. Gold-plated UHF (PL-259/SO-239) connectors.

MG-SRB Medium-Duty Magnetic Mount
With BNC connector on coax, SO-239 on magnet.



5D4N
13.5 feet of extremely low loss coax. Gold-plated N-type connectors. Recommended up to 1400MHz.

COAX SWITCHES

CSW-20
DC-1000MHz
Max Power: 1000W PEP 500W CW
Connectors: SO-239

Insertion loss	Isolation
DC-200MHz 0.05dB	70dB
200MHz-1GHz 0.1dB	60dB

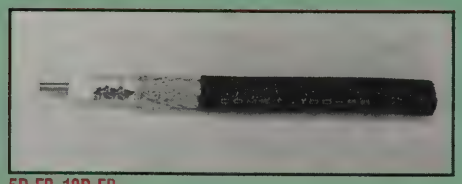
CSW-20N
DC-1500MHz
Max Power: 1000W PEP 500W CW
Connectors: N-Female

Insertion loss	Isolation
DC-1000MHz 0.05dB	70dB
1GHz-1.5GHz 0.1dB	60dB

- 2 position self-cleaning switch mechanism virtually eliminates deterioration.
- Phosphorus bronze springs and contacts ensure excellent reliability.
- Lead alloy case.

LOW-LOSS COAX AND CONNECTORS

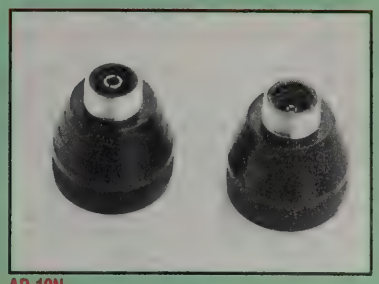
COMET T.M.



5D-FB 10D-FB
Coax
5D-FB: Loss per 100′ at 400MHz: 3.4dB
10D-FB: Loss per 100′ at 400MHz: 2.0dB
(RG-58/U loss per 100′ at 400MHz 12dB+)
(RG-9913 loss per 100′ at 400MHz 2.6dB)

Coax Connectors

Model No.	Description
5D-NPC	Male N-Conn for 5D Coax
5D-NJC	Female N-Conn for 5D Coax
5D-MPC	Male UHF-Conn for 5D Coax
10D-NPC	Male N-Conn for 10D Coax
10D-NJC	Female N-Conn for 10D Coax
10D-MPC	Male UHF-Conn for 10D Coax
MA-JJ	UHF Female/Female Adapter



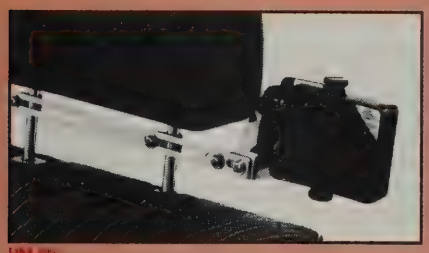
AD-10N
AD-15M

AD-10N	N-NMO adapter
AD-15M	UHF-NMO adapter

SPEAKERS

CSP-80
Mini Speaker with magnetic mount, Noise Filter and −8dB Mute. Excellent Audio Quality!
Dimensions: 5″ x 4″ x 1.5″.

CSP-30
Mini Speaker with magnetic mount. Excellent Audio Quality! Dimensions: 2.75″ x 3″ x 1″.



HM-89
Headrest Speaker Mount.

NEW

ML-7 Micless Microphone
A Dynamic One-Piece Earphone/Microphone.

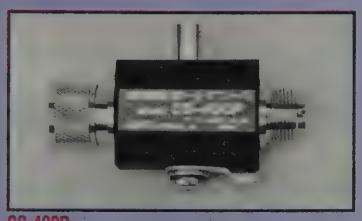
An ultra-mini microphone located within the ear-piece picks up sound from the inner ear. Clear voice is transmitted, with less influence from outside noises.

The ML-7 is not a conventional Speaker/Microphone. Receive is completely hands free.

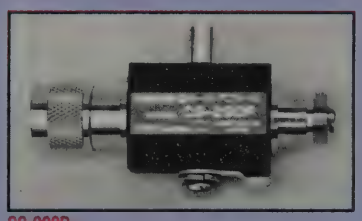
- Especially effective in noisy situations: Parades, airports, factories, etc.
- Cordless mic is especially useful when activity is taking place: bike riding, skiing, hunting, driving, etc.
- Earphone provides privacy and security.
- Excellent TX and RX quality!

ML-7I: For Icom, Yaesu, Standard, Alinco
ML-7K: For Kenwood
Note: Please check for compatibility with your particular radio.

LIGHTNING ARRESTORS



CS-400P
Lightening Protector
Freq. Range: DC-500MHz
Max Power: 500 Watts PEP
Connectors: SO-239/PL-259
Min. Voltage: DC 400v + − 15%
Insertion Loss: Less than 0.1dB
VSWR: Less than 1.1:1



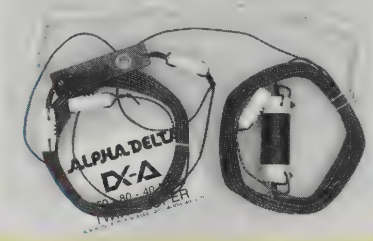
CS-290P
Lightening Protector
Freq. Range: DC-1500MHz
Max Power: 300 Watts PEP
Connectors: N-Female/N-Male
Min. Voltage: DC 290v + − 15%
Insertion Loss: Less than 0.1dB
VSWR: Less than 1.1:1

Alpha Delta problem solvers . . .

Limited Space High Performance Antennas

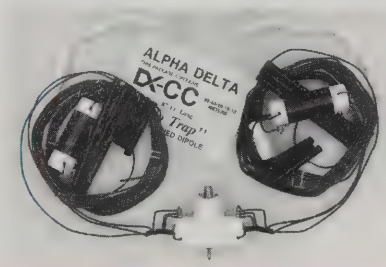
STAINLESS STEEL HARDWARE • FULLY ASSEMBLED • SEVERE WEATHER RATED COMPONENTS • NO-TRAP DESIGN

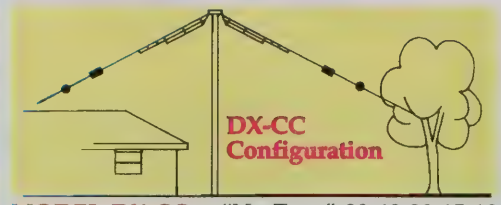
Unlike trap antennas, there are no capacitors to break down under high RF voltages. Full legal power operation – uses "ISO-RES" inductors and 12 ga. insulated solid copper wire. 50 Ω direct coax feed – tuners usually not required when operating in resonant bands, but may be safely used for multi-band operation if desired.



MODEL DX-A •160-80-40 Meter 1/4-Wave Twin Sloper. A top low frequency DX antenna. Combines the tremendous DX firepower of the 1/4-wave sloper with the wide bandwidth of the 1/2-wave dipole. One leg is 67′, the other 55′ – installs like an inverted-V. with ground return thru tower or down-lead..... **$59.95**

Model DX-SWL • SWL Broadcast Sloper Covers 13, 16, 18, 19, 21, 25, 31, 41, 49, 60, 90, and 120 meter short-wave plus AM broadcast bands. Sloper design provides outstanding reception of low-angle DX signals. Multi-band transmit capability with an appropriate antenna tuner – up to 2KW. Overall length 60 ft..... **$69.95**



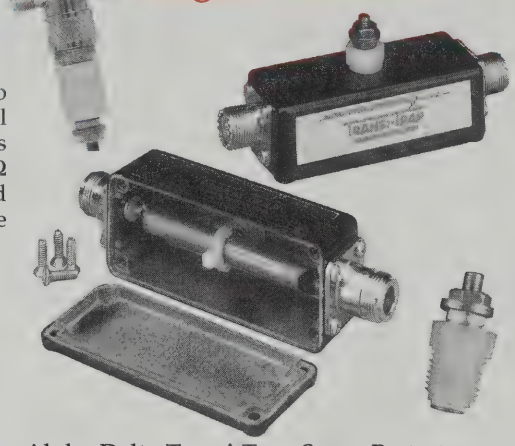


MODEL DX-CC • "No-Trap" 80-40-20-15-10 meter Dipole or Inverted-V. Length - 82 ft..... **$99.95**

MODEL DX-DD • "No-Trap" 80-40 meter Dipole or Inverted-V. Length - 82 ft **$79.95**

MODEL DX-EE • "No-Trap" 40-20-15-10 meter Dipole or Inverted V. Will also cover 30-17-12 meters with a tuner. Length - 40 ft..... **$89.95**

Transi-Trap® Surge Protectors



Alpha Delta Transi-Trap Surge Protectors are gas surge arresters which will protect your valuable ham equipment much more effectively than the lower cost air-gap types.

The heart of the unit is the **Arc-Plug™**, which consists of two electrodes hermetically sealed in a gas filled ceramic cylinder. It acts like a voltage dependent switch that can repeatedly carry large currents for brief periods of time. When a voltage surge occurs on your transmission line, an arc forms between the electrodes allowing it to conduct harmlessly to an independent ground connection, reducing feedline voltage to less than 30 volts. That's protection!

An Arc-Plug can discharge 1000's of normal surges without replacement, and the life of the device is a function of the surge current amplitude and duration. After a sufficient number of discharges there is a gradual lowering of the breakdown voltage and insulation resistance. Replacement indicated by an increase in VSWR. If a unit is "hit" with a big strike, it is designed to fail "shorted", giving an instant indication that replacement is needed. Other brands fail "open", which leaves your expensive equipment unprotected without you knowing it.

Highest quality, finest materials. – heavy cast aluminum housing, brass constant-impedance (50Ω) element, brass ground hardware and only Amphenol connectors are used.

Standard Transi-Trap units are the choice of the U.S. Military, many government agencies, worldwide. The design is based on the U.S. NCS TIB85-10 Bulletin covering lightning and EMP (electromagnetic pulse) protection.

Transi-Trap Protectors are designed for 50Ω coaxial cable and are available with standard SO-239 connectors or N-type connectors which extend operation through 1 GHz.

Five different models to choose from . . .

MODEL RT • 200W thru 500 MHz **$32.95**

MODEL RT/N • 200W thru 1GHz..... **39.95**

MODEL HV • 2KW thru 500 MHz..... **35.95**

MODEL HV/N • 2KW thru 1GHz..... **42.95**

MODEL LT • "T"-type, 200W thru 30 MHz.. **22.95**

MasterCard VISA DISCOVER AMERICAN EXPRESS

Lightning Surge Protected 2 & 4 Position Coax Switches

Alpha Delta Coaxial Antenna Switches are made only in the U.S.A. The extremely high quality custom design features a cast housing with a constant impedance micro-strip cavity for outstanding performance through UHF. No lossy wafer switches are used, and a solid positive detent roller bearing switch drive leaves no-doubt to which position is selected.The unused antenna circuits are automatically grounded to reduce antenna interaction, noise and the effects of lightning. For the antenna circuit that is in use, the famous replaceable **Alpha Delta Arc-Plug™** Cartridge provides continuous protection. Antenna switched in or out, you're well protected both ways! The Arc Plug is easily accessed through front panel so you may permanently mount the switch to to any surface. Both the two and four position models handle full legal amateur power.

Four different models to choose from . . .

DELTA-2 • 2-position switch with SO-239 connectors, good to 500MHz..... **$49.95**

DELTA-2/N • 2-position switch with N-type connectors, good to 1.3 GHz **$64.95**

DELTA-4 • 4-position switch with SO-239 connectors, good to 500MHz..... **$74.95**

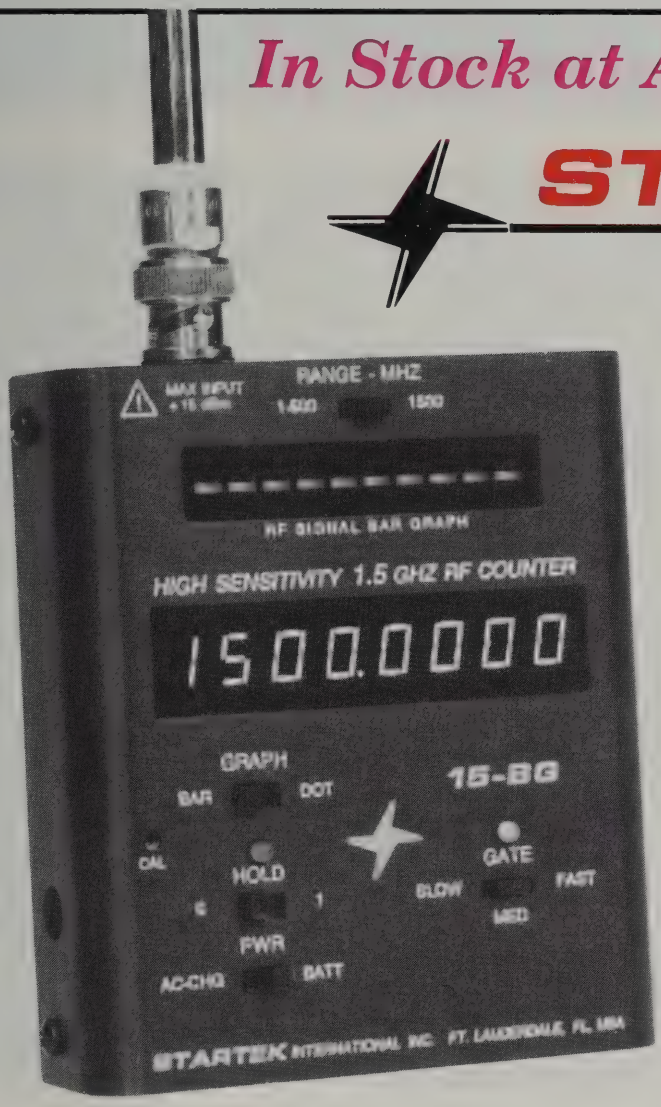
DELTA-4/N • 4-position switch with N-type connectors, good to 1.3 GHz **$89.95**

New! Limited Space Low Band DX Sloper

Model DX-B • A single wire high performance 1/4-wave DX sloper antenna for 160, 80, 40, and 30 meters. Designed for limited space installations where room doesn't allow for the Model DX-A twin sloper. Requires only 60 ft. overall and provides amazing DX performance at installation heights of only 35 ft., and with the low end at only 8 ft. This permits operation on those low bands for those hams previously not able to join in on the fun because of space limitations. It's pre-assembled and pre-tuned. Just put ot up and start enjoying low band operation. Utilizes stainless-steel hardware, 12 gauge solid copper wire and efficient Alpha Delta "Iso-Res" RF choke coils. To gain the same broadbanded performance like the DX-A, the DX-B is also designed to be used with a wide range tuner, so no trimming or tweaking is necessary. 50 Ω coax feed, rated for full legal power operation **$69.95**

ALPHA DELTA COMMUNICATIONS, INC. AA

In Stock at AES® . . . Order Today!



STARTEK

FREQUENCY COUNTERS

MODEL 15-BG

ULTRA HIGH SENSITIVITY RF DETECTOR - COUNTER 2 INCH LED BAR GRAPH

Regular $220. value !!

$169.95

SPECIAL LIMITED TIME OFFER

PLEASE MENTION THIS AD FOR SPECIAL PRICE

STARTEK Bar Graph counters are *simply the best* for finding frequencies, testing, adjusting, repairing or locating RF devices. Superior sensitivity, longer battery operation, high quality USA construction and sub-compact size are just a few of the reasons to select a ***STARTEK*** counter.

STANDARD FEATURES FOR ALL 6 MODELS

- *3 to 5 HOUR* BATTERY PORTABLE OPERATION
- NI-CAD BATTERIES & 110VAC ADP/CHARGER INC.
- 1 PPM TCXO TIME BASE WITH EXTERNAL ADJ.
- 3 GATE TIMES, AUTO DECIMAL PLACEMENT
- HOLD SWITCH (WORKS PROPERLY- NO GATE CHG)
- 9-12VDC AUTO-POLARITY POWER INPUT
- StarCab™ QUALITY ALUMINUM CABINET
- COMPUTER AIDED CIRCUIT DESIGN
- TOP QUALITY COMPONENTS - SOCKETED IC's
- COMPATABLE WITH MFJ-207/208 ANT. ANALYZERS
- FULL YEAR PARTS & LABOR LIMITED WARRANTY
- DESIGNED & ASSEMBLED IN THE USA

Other STARTEK models:	AES® Price
15-UHS 1–500 MHz ultra high sensitivity counter	$144.95
35-BG 1–3200 MHz bargraph ultra high sensitivity counter	239.95
1350 1–1300 MHz frequency counter	119.95
2500 10 Hz–2400 MHz frequency counter	169.95
3500 10 Hz–3500 MHz frequency counter	229.95
DC-10 Direct probe	20.00
LP-22 Lo-pass probe	22.00

Accessories:	AES® Price
TA-90 Telescoping BNC antenna	$12.00
TA-90L Right angle telescoping antenna	17.00
P-110 Probe, 200 MHz, 1x–10x	39.00
CC-90 Black vinyl carrying case	12.00
M-207IC Interface cable for MFJ-207/208	10.00

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Order Toll Free: 1-800-558-0411 **FAX: (414) 358-3337**

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Watch for Future AES® Branch Store Openings!

VHF and UHF Fixed Station Vertical Antenna

Model G7-144 Two Meter Antenna

7 dB GAIN - compared to 1/2-wave dipole

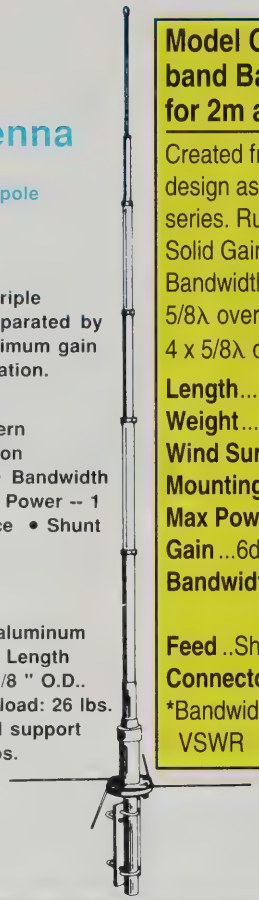
ELECTRICAL

Radiator: Collinear shunt-fed. Triple 5/8-wave elements in series, separated by 2 phasing coils to produce maximum gain and extremely low angle of radiation.

7 dB gain over 1/2-wave dipole
- Omnidirectional radiation pattern
- Extremely low angle of radiation
- Tuning range: 144-148 MHz • Bandwidth for 2:1 or better VSWR: 6 MHz • Power -- 1 KW FM • 50 ohm feed impedance • Shunt fed with DC grounding

MECHANICAL

- High strength fiberglass and aluminum
- Completely self-supporting • Length 184" • Radials: (4) 1/4-wave x 3/8 " O.D.. rod • Connector: N-type • Wind load: 26 lbs. @ 100 mph • Mounting: Vertical support up to 1-3/4 " O.D. • Weight: 10 lbs.



Model G6-270 Dual-band Base Antenna for 2m and 440MHz

Created from the same design as the G7 and G6 series. Rugged Design, Solid Gain and Wide Bandwidth. Consists of 5/8λ over 5/8λ on 2m & 4 x 5/8λ on 440 MHz.

Length..... 7 ft. 6 in.
Weight..... 5.3 lbs.
Wind Survival. 100 mph
Mounting. 1¼"-1½" mast
Max Power .... 200 watts
Gain ...6dBd VHF & UHF
Bandwidth .2 MHz* (2m)
10 MHz* (440)
Feed ..Shunt, DC ground
Connector..... N female
*Bandwidth under 1.5:1 VSWR

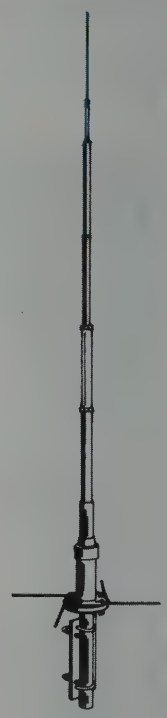
Model G7-220 220 MHz

The 7 dB omnidirectional gain (compared to a 1/2-wave dipole) of this rugged antenna means exceptional 220 MHz (1-1/4 meter) amateur performance, receiving and transmitting. A unique new design keeps the signal pattern at the lowest possible angle for maximum radiation efficiency.

7 dB GAIN -- compared to 1/2-wave dipole

SPECIFICATIONS

- Length: 122" long • Power capability: one kilowatt FM • SWR at resonance: 1.2:1 at antenna • Bandwidth: 5 Mhz for 1.5:1 SWR • Impedance: 50 ohms • Radials: four, 14-3/4 x 3/16" O.D. • Connector: Type N • Wind load:26 lbs. at 100 mph • Mounting vertical support up to 1-3/4"O.D. • Shipping weight: 7.0 lbs.



Reliability & Performance... Beyond Your Expectations!

Model G6-440 Omnidirectional Fixed Station

- Each is pre-tuned at the factory for easy installation • Enclosed in a lightweight tapered fiberglass radome for low wind resistance • Compact size allows shipment via U.P.S. or Parcel Post

ELECTRICAL

- Maximum power input: 250 watts Gain: 6 dB • VSWR 8 MHz under 1.5:1 • Impedance: 50 ohm nominal
- Lightning protection: direct ground
- Termination: Type N female

MECHANICAL

- Length: 87" • Weight: 16 lbs
- Wind survival: 125 mph • Mounting: up to 2" mast

Model G6-144-B

6 dB GAIN -- compared to 1/2-wave dipole

Get the tremendous advantage of 6 dB gain transmitting, 6 dB gain receiving. Whether your application is for individual fixed station or repeater operation the Hustler G6-144-B has superior mechanical and electrical design. Optimum gain is achieved with two 5/8 wavelength radiators correctly phased in collinear configuration. Stated gain figure is conservative and maximum signal radiation is at an extremely low angle

ELECTRICAL

- 6 dB gain over 1/2-wave dipole
- Ominidirectional radiation pattern
- Maximum radiation -- extremely low angle • 50 ohm feed impedance • Field adjustable-- 140-150 Mhz • SWR at resonance-- 1.2:1 measured at antenna
- Bandwidth -- One kilowatt FM • Feed -- Shunt with D.C. grounding • Radiator -- 5/8-wave lower section, 1/4 wave phasing, 5/8-wave upper section

MECHANICAL

- Vertical element -- 117" long, 1-1/8" telescopic to 3/8" OD high strength aluminum • Connector -- SO-239 • Wind load -- 26lbs. at 100 mph • Wind survival --100 mph • Completely self - supporting Mounting -- vertical support up to 1-3/4 " OD • Shipping wt. : 6.8 lbs.

FX Series

3/4 dB gain; 5/8-wave , 200 watt rating
15 foot coax PL-259 connector installed
Magnetic mount holds to 100 mph

lodel FX-2-
meter, black and chrome
odel FX220-
20 MHz, black and chrome

so available in black
odel FX-220B, 220 MHz

RX Series

- 3.4 dB Gain; 5/8-wave • 100 watt rating
- 15 foot coax PL-259 connector installed
- Magnetic mount holds to 75 mph

Model RX-2-
2 meter black and chrome
Model RX-220-
220 MHz, black and chrome

Model BBLT-144A

3.4 dB Gain Trunk-Lip Mount Antenna
Adjustable 143-149 MHz 3.4 dB gain • SWR: 1.1:1 at resonance • Power rating: 200 watts FM • Shunt-fed - - reduced static • Length: 4'4" inc. mt.• Spring and 180 • swivel ball for vertical positioning • 17' coax and connector • No drilling required • Weight: 2.76 lbs.

Model RX-440

UHF Magnetic Mount
- 5/8 over 1/4 wave design
- 5 dB gain
- Speed rated to 75 mph
- Includes 12' coax

Model SF-220

Low Cost 3.4 dB Gain 220 MHz 5/8-wave for 3/8" x 24 thread mounts
• 1.2:1 SWR at resonance • Power rating: 100 watts FM • Tapered stainless steel • 3/8" x 24 thread mount • Length: 2'7" • Wt.: 0.87 lbs.

Model SF-2

Low Cost 3.4 dB Gain 2 meter 5/8-wave for 3/8" x 24 thread mt.
• 3.4 dB gain • 1.2:1 SWR at resonance • Power rating: 100 watts FM
- Tapered stainless radiator
- 3/8" x 24 thread mount
- Length: 4' Wt..: 0.5 lbs.

Model BBL-144A

3.4 dB Gain Roof Mount Antenna
Same as **BBLT-144A** but mounts in 3/4" hole on a flat surface. 17' coax with connectors.

Collinear

Model CGT-220

5.2 dB Gain 5/8 Over 1/4-Wave Collinear Trunk-Lip Mount Antenna
Super gain: 5.2 dB • 1.1:1 SWR (typical) at resonance • 4 MHz band width, 1.5:1 or better SWR • Power rating: 200 watts FM • Heigth: 4' 9" including mount • Spin knob to remove antenna Furnished with 17' of low loss coax and connector

Model CG-220

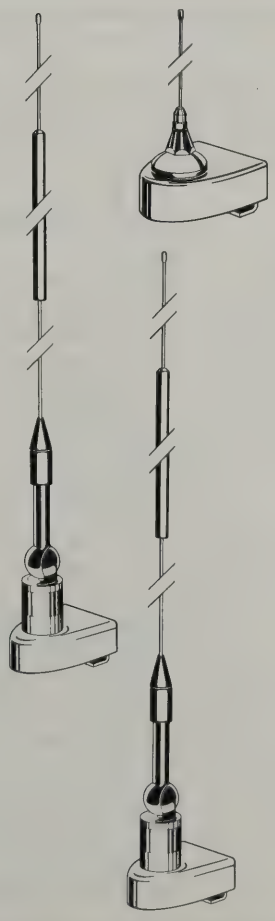
Has identical electrical characteristics as **CGT-220** but with 3/8 x 24 threaded base for use with standard ball mounts or other 3/8" x 24 Hustler mounts.

Model CGT-144

5.2 dB Gain Over 1/4-Wave Collinear Trunk-Lip Mount Antenna
Super gain 5.2 dB • 6 MHz band-width, 1.5:1 SWR • Power rating: 200 watts FM Length: 7' 1" including mount • Spring and 180 • swivel ball for vertical positioning • 17' coax and connector • No drilling required Wt.: 3.34 lbs.

Model CG-144

Same as CGT-144 but has 3/8"x24 threaded base for use with standard ball mounts or other 3/8"x24 Hustler mounts.



Unity Gain

Model THF

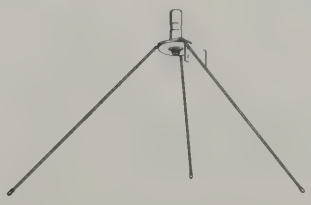
VHF/UHF Trunk-Lip Mount Antenna
Trimmable 17-7 PH stainless steel radiator is cut to 1/4 wavelength for low SWR and unity gain from 140 to 500 MHz. Trim chart included. Easy to install trunk-lip mount attaches to rear or side of trunk lid without drilling. Supplied ready for operation with 17' of coax with connectors installed. 1.5 lbs.

Model UHT-1

VHF/UHF Roof/Deck Mount Antenna
Low profile mount designed for easy installation in a 3/4" hole on any flat surface or on roof without pulling headliner. Unity gain, 1/4-wave performance. Trimmable 17-7 PH stainless steel radiator permits operation on any frequency from 140 to 500 MHz. Trim chart, 15' of coax and connector included, 1.2 lbs.

Model UGM

VHF/UHF Magnetic Mount Antenna
Extend range of handheld or portable radios. Trimmable 17-7 PH stainless steel radiator is cut to 1/4 wavelength for low SWR and unity gain from 140 to 500MHz. Trim chart included. Highly efficient mylar-protected magnetic mount attaches conveniently to magnetic compatible surfaces. No drilling! Supplied ready for operation with 7' of mini-coax with BNC connector and trim chart. 1 lb.



Model MKR-2 Radial Kit

Contains three decoupling radials and mount to convert series-fed mobile VHF antennas to fixed operation. Performance is comparable to many regular base antennas. Suitable for permanent installations or portable use. Heavy-duty zinc plated mast bracket and hardware. Accepts antennas with standard 3/8 x 24 threaded base. 2 lbs.

Mobile Antenna Hardware

Deluxe Mobile Mounts

For antennas up to 60" in length with 3/8" x 24 threads

Model RXM Magnet Mount
- Accepts 3/8 x 24 thread antennas
- Speed rated to 75 mph
- For use with antennas up to 49" long

Model FXM Heavy Duty Magnetic Mount
- Accepts 3/8" x 24 thread antennas
- Speed rated to 100 mph
- For use with antennas up to 55" long

Model HOT "HUSTLOFF" Trunk-Lip

Mounts without holes or drilling. For security just turn knob to remove antenna and mount from trunk-lid. Not removable when trunk closed. 180 ∘ swivel mount with 3/8" x 24 threads, 17' coax with connectors attached. 1.9 lbs.

Model HLM Deluxe Trunk-Lip Mount

Designed specifically for hatch and slanted-back vehicles. No holes or drilling. 180 ∘ adjustable swivel with 3/8" x 245 threads. 17' coax with connectors attached. 1.7lbs.

Model TLM Trunk-Lip Mount

Installs on side of edge or trunk-lid without holes or drilling. Vertical mount with 3/8" x 24 threads. 17' coax with connectors attached. 1.86 lbs.

Model GCM-1 Rain Gutter Mount

Deluxe heavy - guage triple chrome plated brass. installs without holes or drilling on all sizes and any angle rain gutter. 180 ∘ adjustable swivel with 3/8 x 24 threads. 0.8 lbs.

Model MM-1 Cowl Mount

Low profile, installs on any flat surface, or angle, in a 1" hole. 180∘ split-ball swivel for optimum vertical positioning, 3/8" x 24 threads. 1.9 lbs.

Model MM-3 Cowl Mount

Installs on any flat surface, or angle, in a 1" hole. 180 ∘ swivel for optimum vertical position. 3/8" x 24 threads, 5' coax with connectors attached. 1.3 lbs.

Model TGM-1 Trunk Groove Mount

Installs in a hidden area of trunk groove 180 ∘ adjustable swivel, 3/8 x 24 threads. 0.74lbs.

Model RVM Recreational Vehicle Mount

Heavy duty design for veritcal side panel or roof mounting. Knob for rapid removal or lay-down. Optimum vertical positioning with 180 ∘ swivel, 3/8" x 24 threads, 17' coax, including connectors, grommet, and hardware. 1.9lbs.

Standard Commercial Stainless Steel

Model SSM-1

Standard commercial ball mount and stainless steel spring. Shipping weight: 2.53 lbs.

Model SSM-2

Ball mount only.
Shipping weight: 1.3 lbs.

Model SSM-3

Stainless steel spring including 3/8"- 24 coupling stud.
Shipping weight 1.21 lbs.

Professional Series - Heavy Chrome

Model C-32

Hustler professional ball mount. Furnished complete with rubber pad, steel backup plate, all mounting hardware, and hex wren
Shipping weight: .48 lbs.

Model C-29

Stainless steel, corrosion resistant and electropolished spring comple with 3/8"-24 coupling stud. Shippin weight 2.70 lbs.

Model C-30

Chrome-plated steel spring compl with 3/8"-24 coupling stud. Shippin weight: 1.2 lbs.

Bumper Mount

BM-1

Design is rugged for supporting Hustler antenna with standard or super resonators. Heavy stainless steel strap, stronger than chain, fits most bumpers inconspicuously. Assembly is easily installed and held rigid by "J" bolts at the top and bumper strap clamp at bottom.
Mount includes 180 ∘ adjustable swivel ball for vertical positioning of antenna. Hardware is zinc plated for superior resistance against corrosion. Shipping weight 2.70 lbs.

Quick Disconnect

QD-2 100% Stainless Steel

Remove antenna from mount in seconds with push and twist release. Every part including the compression spring is manufactured from the best available 100% stainless steel. Special design of enclosed compression and lock assembly asssures freedom against ice and dirt jam up. Accommodates small, medium and largest size mobile antennas. Equipped with 3/8"-24 threads, female one end and male on the other. Shipping weight .40 lbs.

Coax Leads

LU-216

216" top-quality RG-58 coaxial cable with PL-259 connectors on both ends. Shipping weight 0.76 lbs.

L-14-144

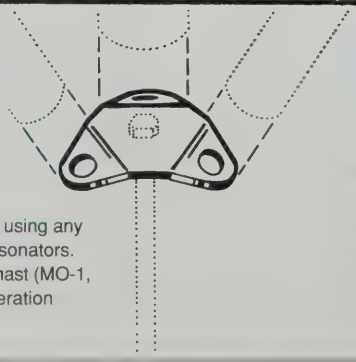
144" top-quality RG-58 coaxial cable with PL-259 connector on one end and split end with lugs on the other. Shipping weight 0.51 lbs.

L-14-240

Same as L-14-144 except 240" coaxial cable.Shipping weight 0.71 lbs.

Multi-band Adapter

Model VP-1



- Automatic bandswitching using any three Hustler H.F. mobile resonators.
- Adapts any Hustler H.F. mast (MO-1, MO-2, MO-3) to tri-band operation easily and quickly.

Resonator Spring RSS-2

Finest quality stainless steel spring for use between resonator and Hustler antenna mast. This 3/4" x 3-1/2" spring absorbs shock when antenna strikes overhanging obstructions. Supplied ready for easy installation with 3/8"-24 threads, female on one end, male on the other.
Shipping weight .36 lbs.

Fixed Station Multi-Band HF Vertical Antennas

- Broadbanded - low VSWR at band edges
- Power capability - full legal limit on SSB or CW
- Solid one-inch fiberglass trap forms for optimum electrical and mechanical stability
- Heavy wall, high strength aluminum tubing, heavy duty aluminum mounting bracket and low loss,high strength insulators
- Stainless steel clamps and hardware
- Easy assembly and tuning
- Single line feed with any length of 50 ohm coax
- Use as ground mount with or without radials, or elevated mount with radials

5BTV

Model 6-BTV

Bands _____ 10-15-20-30-40 & 75 or 80 meters
Length/weight _____ 24'/16.5 lbs.
Mounting _____ vertical support up to 1-3/4" O.D.
Wind load _____ 29 Lbs. @ 70 mph
Power capability ___ Full legal limit SSB/CW
VSWR at resonance _ 1.15 to 1 or better
Bandwidth _____ VSWR 2:1 or better at band edges on 10-40 meters (100 KHz on 75/80 meters)

Model 5-BTV

Bands _____ 10-15-20-40 & 75 or 80 meters
Length/weight _____ 25.1/17lbs.
Mounting _____ vertical support up to 1-3/4 O.D.
Wind load _____ 29 lbs. @ 70 mph
Power capability ___ Full legal limit SSB/CW
VSWR at resonance 1.15 to 1 or better
Bandwidth _____ VSWR 2:1 or better at band edges on 10-40 meters (100 KHz on 75/80 Meters)

Model 4-BTV

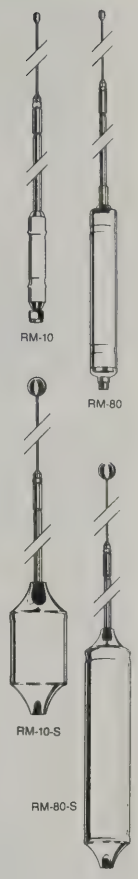
Bands _____ 10-15-20-40 meters
Length/weight _____ 21'5" / 15lbs.
Mounting _____ vertical support up to 1-3/4" O.D.
Power capability____ Full legal limit SSB/CW
VSWR at resonance 1.15 to 1 or better
Bandwidth _____ VSWR 1.6:1 at band edges

Hustler Resonators

Standard Resonators

Power rating 400 watts SSB

Part	Description	Weight	Approx. Bandwidth 2:1 SWR or Better
RM-10	10 METER	.41 lbs.	150-250 kHz
RM-11	11 METER	.41 lbs.	150-250 kHz
RM-12	12 METER	.42 lbs	90-120 kHz
RM-15	15 METER	.42 lbs.	100-150 kHz
RM-17	17 METER	.46 lbs.	150 kHz
RM-20	20 METER	.46 lbs.	80-100 kHz
RM-30	30 METER	.84 lbs.	50-60 kHz
RM-40	40 METER	.84 lbs.	40-50 kHz
RM-75	75 METER	1.05 lbs.	25-30 kHz
RM-80	80 METER	1.05 lbs	25-30 kHz



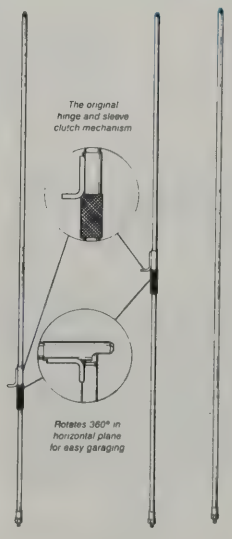
Super Resonators

Power rating full legal limit. Super Resonators also offer wider bandwidth, espically on 40, 75 and 80 meters.

Part	Description	Weight	Approx. Bandwidth 2:1 SWR or Better
RM-10-S	10 METER	1.0 lbs.	250-400 kHz
RM-11-S	11 METER	1.0 lbs.	250-400 kHz
RM-15-S	15 METER	1.2 lbs	150-200 kHz
RM-20-S	20 METER	1.2 lbs.	100-150 kHz
RM-40-S	40 METER	1.82 lbs.	50-80 kHz
RM-75-S	75 METER	2.11 lbs.	50-60 kHz
RM-80-S	80 METER	2.11 lbs	50-60 kHz

Mobile HF Antennas

Hustler Masts



MO-1 Mobile mast. 54" high for deck or fender mounting- folds over 15" above base

MO-2 Mobile mast. 54" high, for bumper mounting - folds over 27" above base.

MO-3 Mobile mast. 54" high, Great for marine use!

MO-4 HF Mobile Mast.
- For use with Hustler HF resonators
- Only 22" long
- Suitable for trunk or deck mounting
- Includes 3 new tip rods

30 Meter Add-on Kit for 4-BTV and 5-BTV

Model 30-MTK
Full 30 meter Band coverage
Will not affect normal operation
Easy installation
All hardware included
Weight: 5 lbs.

RMX 10 Meter Mobile

- VSWR - 250-400 kHz under 2:1
- 1000 watt capacity
- Only 46 inches tall
- Can be trunk lip mounted using model HLM or TLM
- Stainless steel impact spring built into top of coil

Available in Black or white

Reliability & Performance... Beyond Your Expectations!

Van Gorden Engineering

HI-Q Balun • $14.95

- 1:1 or 4:1 impedance ratio: For 50Ω unbalance coaxial cable to 50Ω balanced antennas.
- For dipoles, yagis, inverted vees and doublets.
- Covers 3-40MHz, full legal power
- Replaces center insulator
- Reduces feedline radiation for more power into antenna, and less TVI and BCI problems.
- Built-in DC ground reduces noise and protects against lightning.
- Weatherproof. SO-239 connector

Hi-Q Antenna Center Insulator • $6.95

- Replace egg center insulator
- NO internal balun
- Small, rugged, lightweight, weatherproof with SO-239 connector and convenient center support eye hook.

$29.95

Van Gordon All-Bander Dipole Antenna

Covers 160-10M when used with an antenna tuner with balanced output. Length is 135 ft., or less when erected as an inverted vee or sloper. May be trimmed to fit smaller lots. Constructed of #14 (7/22) gauge stranded copper wire, and center fed with 100 ft. of low loss PVC covered 450Ω balanced line. Includes center insulator with an eye hook for support and end insulators. Handles 2KW PEP, assembled.

Van Gorden Dipole Antennas

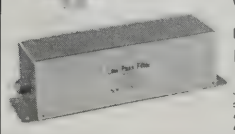
With Hi-Q Balun, #14 stranded antenna wire, insulators and 100 ft. of nylon support rope. Rated for full legal power, may be used as an inverted Vee. Available for 80/75m (130 ft.), 40/15m, (66 ft.), 20m (33 ft.), 15m, (22 ft.) and 10m (16 ft.). Shorty 80m (90 ft) and 40m (45 ft.) dipole models include appropriate traps as pictured.....*See Price List*

Van Gorden G5RV Multiband Antenna

Covers 3.5 to 30MHz, and also 1.8 MHz as a Marconi type antenna with a tuner and good ground. Consists of a 102 ft. flattop with a 31 ft. section of 300Ω KW twinlead, a transformer/coupler and 70 ft. of RG-8X mini-foam coaxial cable with SO-239 connector. Handles 2KW PEP, assembled ...**$49.95**

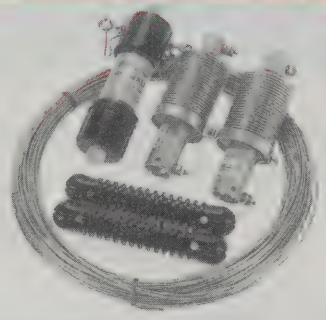
BENCHER

ZA-1A 1:1 HF Balun • Use with 80-10 meter dipoles, Vees, quads and yagis. Transforms 52Ω unbalanced coax transmission line to a balanced feed Reduces feedline radiation which in turn increases efficiency and reduces TVI and BCI. Uses no ferrite core so it can accept a substantial mismatch at the legal power limit which allows use with antenna tuners. DC grounded for lightning protection. HWK hardware kit available for mounting to a 2" antenna boom.....**$34.95**



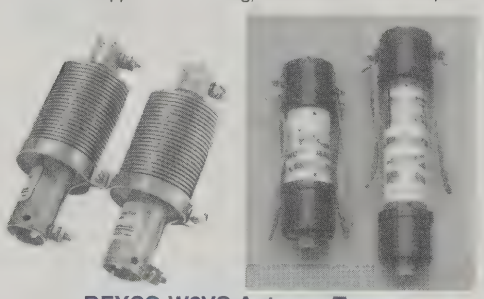
YA-1 Low Pass Filter • Cure TVI caused by HF transmitter harmonics. For 1.8 to 29.7MHz, rated 1.5KW continuous or 5KW peak. ≥80dB attenuation at 54MHz. 2½"w x 9¼"l x 2½"h, 2 lbs...**$49.95**

UNADILLA (W2AU)



W2AU/W2VS 5-Band Antenna Kit

Low SWR on 80 and 40 meters, resonant on 10, 15 and 20 meters. Includes 40 meter traps, W2AU 1:1 balun, end insulators, 120 ft. of #14 stranded copper wire, and assembly instructions. Approx. 110 ft. long, rated 2KW PEP.....**$69.95**



REYCO W2VS Antenna Traps

(left): Add these traps to your dipole for multiband operation on two to six bands. *For example:* add the 40 meter pair (KW-40) and get 40 and 80 meter operation. For 10, 15, 20 ,40, 80 and 160 meters, add all five pairs – 33 combinations!

Selecting Traps:

List the bands you want to cover, listing the highest frequency band first. You will need a pair of traps for each band except the one with the lowest frequency..... ***See Price List***

W2AU Ferrite Baluns

(right): Provides a smooth transition from unbalanced coaxial transmission line to balanced antennas – dipoles, quads, yagis. Produces proper current distribution resulting in reduced feedline radiation for maximum power transfer, gain and reduced possibility of TVI and BCI. Replaces center insulator, DC grounded for lighting protection, has convenient center eye hook for support. Usable from 3- 40MHz and rated at 2KW PEP. Available in 1:1 or 4:1 ratios, or beam **$19.95**

W2DU Non -Transformer Choke Baluns

High efficiency , 1:1 ratio. The HF model is the only one available that works on 160 meters!.Handles VSWR up to 5:1 at legal limit, allowing use with antenna tuners. The VHF model eliminates the usual rod and tube hardware balun assembly normally used at those frequencies. *Models:* **HF** (1.8-30MHz), **VHF** (30-250MHz), **HF Beam Balun** (40-10 meters) **$21.95**

MIRAGE

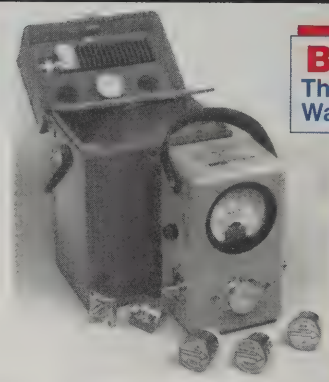
HF & VHF Wattmeters

Reads Peak (SSB) or Average (CW) Power.
Shows SWR direct without charts or graphs.
Remotable coupler.
High quality meter.
Easy to use. **$179.95**
5-year Warranty.

Frequency Range:
MP-1 • HF Model..... Covers 1.8 to 30 MHz
MP-2 • VHF Model..... Covers 50 to 200MHz

***Power Ranges** (accuracy ± 5%), ±1% meter:*
MP-1..... 25W, 200W & 2000 W
MP-2..... 50W, 500W & 1500W

Power required to read SWR (MP-1 & MP-2) ..... 1W to 2W
Functions... Peak or Average Forward/Reverse Power and SWR
Input and Output Impedance .. 50Ω coax, SO-239 connectors
Power Requirement..... 9V internal battery or ext. AC adapter
Size and Weight.....5¾" x 4½" x 5¾", 3½ lbs



BIRD Thruline® Wattmeters

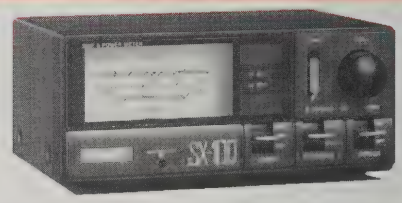
Carrying case, dummy load, elements and connectors ***Optional***

BIRD 43 Thruline® Wattmeter • Measures both forward and reflected CW power in 50Ω coaxial transmission lines. Low VSWR and insertion loss, ±5% of full scale accuracy. Plug-in elements provide a wide choice of frequency ranges from 2 to 1000MHz and power levels from 1W to 5KW. Select one or more elements to suit your requirements. Comes with SO-239 connectors. *Optional* Quick-Change connectors for PL-259, Type-N and BNC. 6⅞"h x 5⅛"w x 3⅝"d, 3 lbs..... **$215.00**

Model 43P • Same as Model 43 but includes a circuit that allows very accurate measurement of Peak Power without affecting the CW measurement capabilities. Uses all of the standard plug-in elements. Requires (2) 9V batteries **$325.00**

Model 4431 • Same as Model 43 but with convenient, built-in, variable RF signal sampler. Provides an RF signal sample (for use with counters, oscilloscopes, spectrum analyzers, etc.) at the same time a power measurement is made **$383.00**

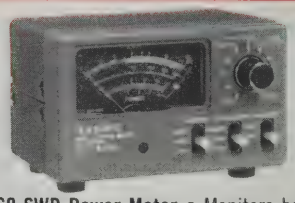
DIAMOND SWR/Power meters



SX-Series • Installs between transmitter and antenna for measurement of forward and reflected average (CW) and SSB (PEP) RF power, and SWR. Accuracy is ±5 to 10% of full scale depending on frequency and power. Illuminated meter, sensor switch and LED indicator. Power ratings listed below are for intermittant operation. For continuous mode (CW, FM, etc.) maximum ratings vary with frequency and are listed in the instructions. All models have SO-239 connectors, except SX-1000 which has Type-N. SX-600 & SX-1000 are *dual band.* Requires 12V DC for displays. 6"w x 2½"h x 4"d, 2 lbs.

Model	Power	Freq. Range	Display	Price
SX-100	3KW	1.6-60MHz	30W/300W/3KW	$139.95
SX-200	200W	1.8-200MHz	5W/20W/200W	99.95
SX-400	200W	140-525MHz	5W/20W/200W	119.95
SX-600	200W	1.0-160Mz + 140-525MHz	5W/20W/200W	169.95
SX-1000	200W	1.8-160MHz + 430-1300MHz	5W/20W/200W	229.95

YAESU SWR/Power meters



YAESU YS-60 SWR Power Meter • Monitors both average (CW) and peak (SSB) transmitter power output, and VSWR of antenna system. Covers 1.6-60MHz and measures up to 2KW with meter ranges of 20/200/2000W. SO-239 connectors. Requires external 12V DC for meter lamps and internal op amp circuits. 4¾ "w x 2¾ "h x 3½ "d, 24 oz **$119.95**

YAESU YS-500 SWR and Power Meter • Similar to YS-60 but covers 140 to 525MHz and measures up to 200W with meter ranges of 4/20/200W.– does not require 12V DC **$99.00**

MasterCard VISA DISCOVER AMERICAN EXPRESS

Choose Your Mobile In 3 Easy Steps:

Step 1 Choose Your Bands!

Single Band: 2 Meters

Today's most popular band, the best place for new hams to meet old hands, learn good operating procedures. Very friendly, thousands of open repeaters & autopatches everywhere. Great for on/off-the-road help. Crowded, though, especially in cities. Single-band mobile is easy to learn & use. No-Code friendly!

Multiple Band: 2 Meter/440MHz

The two most popular FM bands. A "natural" mix of high activity & special group channels, this is becoming the amateur's favorite mobile rig. Instant control of either band, and you can set up your station as a crossband full-duplex repeater. Gateway into advanced operating systems unavailable on 2M.

440 MHz

Next most popular band, less crowded with more high-tech, "smart" repeaters offering autopatch, remote base, linking, digital-voice recording. Some are limited-access (PL). Allows crossband repeating between singleband handhelds & dualband mobiles. 440 gives access to advanced technical info. This is where the pros hang out! No-Code friendly!

2Meter/220MHz

For the unconventional, this combines the most popular & the least crowded bands. Gives access to the people & services on 2M, plus the privacy & open space of 220, plus the advantages of telephone-like duplexing. Valuable where privacy is a concern.

220MHz

Fairly quiet, less crowded than 440, with almost half as many repeaters and the same high-tech functions. Plenty of open channels for semi-private conversation. Great place to meet newcomers, youngsters. Ideal for ham family, since all classes have voice privileges on 220. No-Code friendly!

2M/440MHz/1.2GHz

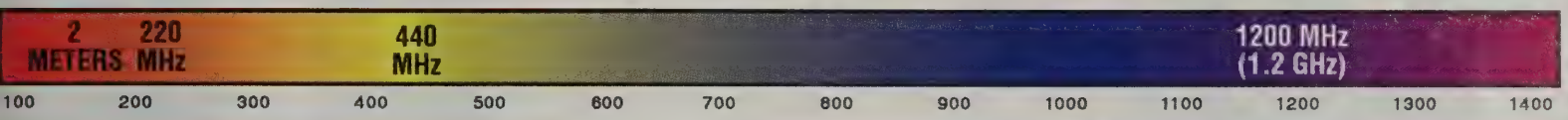
If you live and breathe radio, these are the bands for you! They give you the activity, the expandability and the novelty. Particularly useful for advanced hams who work in the city and live in the suburbs.

1.2 GHz

Radio's new frontier for ham pioneers. Shorter range than 2M or 220/440 in the open, but penetrates buildings, even elevators & underground garages. Excellent for cities. Crystal clear reception. Signals can be "bounced" for distance. Number of repeaters increasing faster than any other band.

MultiBand

Widest selection of all: start with 2M/440. Add 6M for No-Code Skywave privileges. Add 10M for Novice and Tech-Plus privileges. Add 1.2GHz for the big city. If you're a shortwave buff, add scanning and SWL. Additional capacity sold as add-on modules.



Step 2 Choose Your Radio!

IC-28H 2 Meters

Ideal starter rig. 45-W single band, 21 memories, LCD display. Receives NOAA/WX

IC-228H 2 Meters

Same as IC-28, w/ color display, more skip & scan features & priority watch.

IC-229H 2 Meters

Even more features – automatic dialing, 50W power, ultracompact case.

IC-449H 440MHz

35W UHF transceiver, 20 memories, scanning, optional autodial.

IC-38A 220MHz

Same as IC-228H, with 220's privacy, 25W & 21 memory channels.

IC-1201 1.2 GHz

A natural for the city. Penetrates structures. 10W output, 20 memories & priority watch.

IC-3230A/H 2 Meter/440 MHz

One touch control, color-coded controls. 25/45W output, simultaneous reception, crossband repeat, 15 memories/band.

IC-2410A/H 2 Meter/440MHz

Same functions as IC-3230, plus ParaWatch for receiving 2 signals on same band simultaneously.

IC-2330A/H 2 Meter/220 MHz

Most popular & least used bands combined. One-touch control. 36 memories/band, variable power output, hi-res display.

IC-901 Modular MultiBand

World's only 6-band mobile amateur radio. 2M/440MHz standard. Optional 220MHz, 1.2GHz, 10M, 6M, 2M-SSB, or wideband receiver.

Step 3 Choose ICOM!

Free Brochure Hotline 1-800-999-9877

ICOM America, Inc., 2380 116th Ave N.E., Bellevue, WA 98004

All stated specifications subject to change without notice or obligation. All ICOM radios significantly exceed FCC regulations limiting spurious emissions. SM1092

ICOM

Experience the Quality

AEA

IsoLoop 10-30™ • For hams with limited space or antenna restrictions. Only 43" in diameter, perfect for attic or balcony. Covers 10-30MHz, handles 150W. Small control box allows accurate tuning right from operating position. New frequency indicator! Supplied with 50 ft. control cable, mast not included. Comes fully assembled. 14 lbs **$329.95**

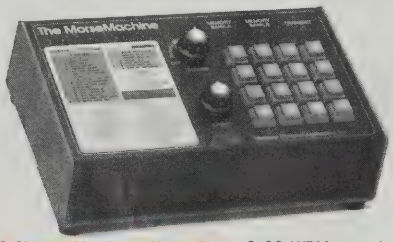
AEA IsoPole Omni-Directional VHF & UHF Base Station Antennas

For **144**, **220** and **440 MHz**. All IsoPole antennas yield the maximum gain attainable for their respective lengths and a zero degree radiation angle which puts most of the signal on the horizon. Exceptional decoupling results in simple tuning and a significant reduction in TVI potential. Broad frequency range - typical SWR is 1.4 to 1 or better across the entire band.

All mounting hardware is stainless steel. The decoupling cones and radiating elements are made of corrosion-resistant aluminum alloys. Aerodynamic cones are the only appreciable wind load and are attached directly to the support pipe (a 1-1/4" O.D.TV mast (not supplied).

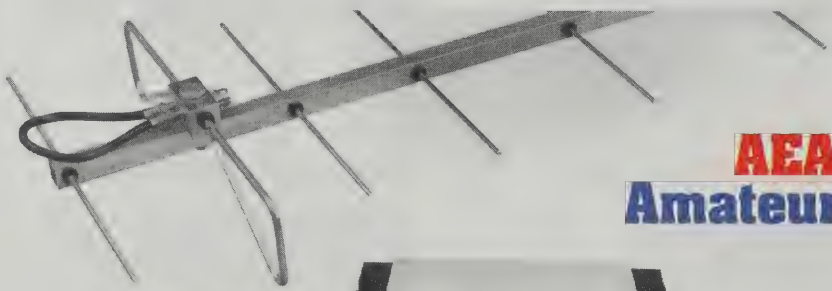
Isopoles are ideal for Packet Radio. The decoupling cones function to stop computer hash picked up by the outer shield of the coaxial cable from being passed to the receiver.

Model	IsoPole 144	IsoPole 220	IsoPole 440
Frequency:	135-160MHz	210-220MHz	415-465MHz
2:1 Bandwidth:	10 MHz	15 MHz	22 MHz
Power Rating:	1 KW	1 KW	1 KW
Length:	125.5"	79.25"	46"
Wind Area:	< 1ft²	< 0.75 ft²	< 0.2 ft²
Connector:	SO-239	SO-239	Type N
Price:	$59.00	$59.00	$89.00



MM-3 Morse Machine Keyer™ • 2-99 WPM speed and 20 soft partitioned memories for up to 8400 characters (expandable to 32K). Selectable Farnsworth code. Provides Comprehensive Morse training: **Proficiency Trainer** for code with increasing speed; **Random Word Generator** generates pseudo-random four letter words; realistic **QSO** and **DX Contest simulators** put it all together. Six keypad programmable modes: Keyer/Memory Send; Beacon; Memory Load; Trainer; Morse Terminal. RS-232 compatible for computer control of programming and screen display of practice. Requires 9-16V DC. 2½" x 7⅝" x 4½", 1.4 lbs **$179.95**

AEA Hat Rods • High performance **1/2-wave** telescoping antennas for handhelds. Bands: 2m **(HR-1)**, 220MHz **(HR-2)** or 440 MHz **(HR-4)**. Handles 25W, BNC connectors.....**each $24.00**



AEA
Amateur TV!

AEA VSB-70 Fast Scan TV Transceiver (right) • The only transceiver you will need to work ATV! Features a low-noise UHF GaAsFET preamplifier with a typical noise figure of less than 1.5dB, and a crystal-controlled or variable tuning down converter. The output is available on either channel 3 or 4 for signal reception AND monitoring transmissions on your own TV set. Two frequencies are selectable from front panel for transceive. Features a Vestigial sideband system, optimized for superior video and audio quality without sync buzz, even with weak signals. **Covers:** 420 to 440MHz • **Operating Range:** 434 and 439.25MHz, comes supplied with CHANNEL 3, 421.25 and 426.25MHz are optional. • **Power Out:** 1W PEP on sync peaks • **Power Requirement:** 13.6V DC @ 1.5A. • **Size:** 7.4"w x 8.3"d x 2.6"h, 2.2 lbs. **$329.95**

AEA RLA-70 Amplifier with Power Supply (left/center) • A 50W mast-mounted linear, housed in a weather resistant enclosure that uses the feedline for supplying the DC power. Covers 420 to 450 MHz and boosts ATV signal while preserving the characteristics of VSB. A 10dB gain GaAsFET receive preamplifier is also built-in, and conveniently includes all antenna switching circuitry. Mast mounting eliminates the feedline loss between the amplifier/preamplifer and the antenna which improves both transmission and reception. The MPS-100 Power Supply comes with the amplifier and provides 28VDC for the amplifier, plus a 13.8 volt output for the VSB-70. unit **$679.95**

AEA 430-16 Wideband Yagi Antenna (top) • A high performance, computer-optimized yagi for ATV operation. Features 16 elements on a 10-foot boom covering 420 to 440MHz with 14.3 dBd gain and 250W power rating. Wt. 4 lbs. **$119.00**

AZIMUTH

Azimuth AZIGC24 • Giant-Size Digits! No more squinting. This clock features an amazing new "see-thru" LCD 3⅛"W x 2¼"H with BIG floating digits that are over 1¾" high. Brushed black metal stand 4½ "H. Battery operated (included) **$29.95**

Azimuth Computerized Weather Stations

Gives Wind, Temperature, Rain + Barometric Trend, Humidity, Dew Point, Alarms, Download & Graph Data on your PC, Remote with Modem Interface, Central Junction Box for Easy Hook-up. Modular Design. Perfect for NOAA WX Monitoring Stations.

For WeatherSTAR options - See Price List

Azimuth WeatherSTAR Monitor II $369.95

MON-2

TEMPERATURE, WIND SPEED and DIRECTION, WIND CHILL FACTOR, TIME and DATE, IBM-PC INTERFACE*

***See Wizard II specs.**

BAROMETRIC PRESSURE

Barometric pressure from 26.00 to 32.00 in. of mercury (660 to 812 mm or 880 to 1084 mb. • Trend arrow shows if pressure is stable or increasing or decreasing • Alarm for change greater than .02, 0.4, or .06 inches of mercury

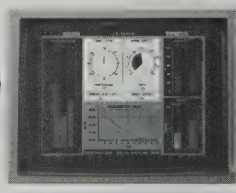
HUMIDITY

• Inside humidity from 10% to 90%. • Outside humidity optional, requires external humidity/temp sensor, below High and low humidity readings with time and date • Alarms for high/low humidities.• 1⅞" x 4⅜" LCD display

External Humidity/Temp Sensor • Allows Monitor II to measure outside humidity, dew point and temperature. Comes with 40 ft. cable..... **HUMD $79.95**

WIZ-2

WeatherSTAR Wizard II $239.95



WeatherSTAR Link Interface Software, cable, serial port adapters to connect IBM compatibles to WeatherSTAR. stations....**AZILINK $169.95**

TEMPERATURE

• Inside temperature from 32°F to 140°F (0°C to 60°C) • Outside temperature from 50°F to 140°F (-45°C to 60°C) • High and low temperatures with time and date • Alarms for high and low temperatures.

WIND SPEED AND DIRECTION

• Wind direction in 1° or 10° increments • Wind speed to 126 mph (203kph, 109 knots for 56.0 m/s) • High wind gust with time and date • Alarm for high wind speed.

WIND CHILL FACTOR

• Wind chill to -134°F (-92°C) • Low wind chill with time and date • Alarm for low wind chill

TIME AND DATE

12 or 24 hour • Time alarm • Date • ¾" x 3¼" LCD display

OPTIONS

Rain collector RG4 self dumping, monitors rainfall - daily and accumulated in 0.1" increments • Extension cables for anemometer or junction box • WeatherSTAR Link IBM-PC interface for WX DataBase, Graphs and Charts.

MasterCard VISA DISCOVER AMERICAN EXPRESS

MIRAGE Amateur Band Amplifiers • VHF

ALL VHF MODELS FEATURE . . .

- GaAs-FET Receive Pre-Amp
- Noise Figure less than 0.6 dB
- Adjustable Pre-Amp Gain to Prevent Intermodulation
- Pre-Amp Gain Over 20dB on High Position
- Variable automatic Relay Switching with delay adjustment for SSB
- High VSWR Shutdown
- Intermittent Duty Cycle With Internal Over-Temperature Protection
- Complete Front Panel Switching
- All Mode Operation (SSB, CW or FM)
- Overcurrent Shutdown
- Remote Control Outlet

WARRANTY: Amplifiers are warranteed for 5 years (parts & labor), except power transistors (1 year).

6 METER AMPLIFIERS — 50 - 54 MHz

	A1015-G	A1035-G
	10W In - 150W Out	10W In - 350W Out
SPECIFICATIONS:		
RF POWER IN	1 to 15 Watts	2.0 to 15 Watts
RF POWER OUT	150 Watts	350 Watts
CURRENT/ VOLTAGE	18-22 Amps @ 13.8 Volts	18-22 Amps @ 27-30 Volts
SIZE	12" X 3" X 5.5"	12" X 3" X 5.5"
WEIGHT	5 lbs.	5 lbs.

2 METER AMPLIFIERS — 144 - 148 MHz

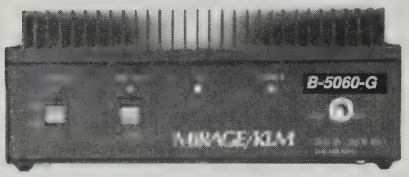
	B-23 (without pre-amp)	B-23-G	B-215-G
	2W In - 30W Out	2W In - 30W Out	2W In - 150W Out
	FEATURES	FEATURES	FEATURES
	Handie-Talkie Amp Has No Power or VSWR Shutdown No Remote Outlet	Compact Size Complete Front Panel Switching Has No VSWR Shutdown No Remote Outlet	Designed for Handie-Talkies
SPECIFICATIONS:			
RF POWER IN	100mW to 5 Watts	100mW to 5 Watts	200mW to 5 Watts
RF POWER OUT	30 Watts	30 Watts	150 Watts
CURRENT/ VOLTAGE	5 Amps @ 13.8 Volts	5 Amps @ 13.8 Volts	20-25 Amps @ 13.8 Volts
SIZE	4" X 2" X 4.5"	3.5" X 2" X 7"	12" X 3" X 5.5"
WEIGHT	1 lb.	1.25 lbs.	5 lbs.

	B-108-G	B-1016-G	B-2516-G	B-5016-G
	10W In - 80W Out	10W In - 160W Out	30W In - 160W Out	50W In - 160W Out
	FEATURES	FEATURES		
	Excellent for Handie-Talkies	1 Watt in will give 60 Watts out		
SPECIFICATIONS:				
RF POWER IN	200mW to 15 Watts	100mW to 15 Watts	200mW to 40 Watts	35W to 55 Watts
RF POWER OUT	80 Watts	160 Watts	160 Watts	160 Watts
CURRENT/ VOLTAGE	10-12 Amps @ 13.8 Volts	20-25 Amps @ 13.8 Volts	17-22 Amps @ 13.8 Volts	17-22 Amps nom. @ 13.8 Volts
SIZE	8" X 3" X 5.5"	12" X 3" X 5.5"	12" X 3" X 5.5"	12" X 3" X 5.5"
WEIGHT	3 lbs.	5 lbs.	5 lbs.	5 lbs.

	B-1030-G NEW	B-2530-G	B-5030-G
	10W In - 300W Out	25W In - 300W Out	50W In - 300W Out
	FEATURES	FEATURES	FEATURES
	Excellent for Handie-Talkies	Linear Curve: 1W-30W, 45W max High Speed RF Switching Relay	High Speed RF Switching Relay
SPECIFICATIONS:			
RF POWER IN	1W to 10 Watts	1W to 45 Watts	1W to 60 Watts
RF POWER OUT	300 Watts +	300 Watts +	300 Watts +
CURRENT/ VOLTAGE	48 Amps nom. @ 13.8 Volts	48 Amps nom. @ 13.8 Volts	48 Amps nom. @ 13.8 Volts
SIZE	10" X 12" X 5"	10" X 12" X 5"	10" X 12" X 5"
WEIGHT	15 lbs.	15 lbs.	15 lbs.

MIRAGE Amateur Band Amplifiers • VHF

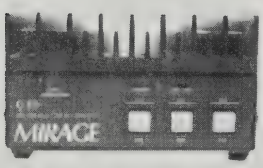
2 METER AMPLIFIERS — 144 - 148 MHz (CONTINUED)



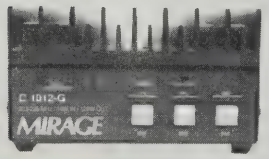
	B-1060-G NEW	B-2560-G NEW	B-5060-G NEW
	10W In - 600W Out	25W In - 600W Out	50W In - 600W Out
FEATURES	Excellent for Handie-Talkies		
SPECIFICATIONS:			
RF POWER IN	1 W to 10 Watts	10 W to 30 Watts	30 W to 60 Watts
RF POWER OUT	600 Watts	600 Watts	600 Watts
CURRENT/ VOLTAGE	42-52 Amps @ 28 Volts*	42-52 Amps @ 28 Volts*	35-45 Amps @ 28 Volts*
SIZE	10" X 12" X 5"	10" X 12" X 5"	10" X 12" X 5"
WEIGHT	15 lbs.	15 lbs.	15 lbs.

* Two 13.8 Volt power supplies can be combined in a series to provide 27.6 Volts for operating these new amplifiers. Application information is provided in the operations manual to safely combine power supplies.

1 1/4 METER AMPLIFIERS — 223 - 225 MHz



	C-22 (Without Pre-Amp)	C-22-G	C-106-G	C-211-G
	2W In - 20W Out	2W In - 20W Out	10W In - 60W Out	2W In - 110W Out
FEATURES	Compact Size No Power or VSWR Shutdown No Remote Outlet Excellent for H/T's	Compact Size No VSWR Shutdown No Remote Outlet Excellent for H/T's	Excellent for H/T's	Excellent for H/T's
SPECIFICATIONS:				
RF POWER IN	100mW to 5 Watts	100mW to 5 Watts	300mW to 15 Watts	300mW to 4 Watts
RF POWER OUT	20 Watts	20 Watts	60 Watts	110 Watts
CURRENT/ VOLTAGE	5 Amps @ 13.8 Volts	5 Amps @ 13.8 Volts	10-12 Amps @ 13.8 Volts	18-20 Amps @ 13.8 Volts
SIZE	4" X 2" X 4.5"	3.5" X 2" X 7"	8" X 3" X 5.5"	12" X 3" X 5"
WEIGHT	1 lb.	1.25 lbs.	3 lbs.	5 lbs.



	C-1012-G	C-2512-G	C-5012-G
	10W In - 120W Out	25W In - 120W Out	50W In - 120W Out
FEATURES	1 Watt in will give 15 Watts out		
SPECIFICATIONS:			
RF POWER IN	300mW to 15 Watts	300mW to 40 Watts	35W to 55 Watts
RF POWER OUT	120 Watts	120 Watts	120 Watts
CURRENT/ VOLTAGE	18-20 Amps @ 13.8 Volts	16-18 Amps nom. @ 13.8 Volts	16-18 Amps nom. @ 13.8 Volts
SIZE	12" X 3" X 5.5"	12" X 3" X 5.5"	12" X 3" X 5.5"
WEIGHT	5 lbs.	5 lbs.	5 lbs.

	C-1022-G NEW	C-2522-G	C-5022-G
	10W In - 220W Out	25W In - 220W Out	50W In - 220W Out
SPECIFICATIONS:			
RF POWER IN	1W to 10 Watts	1W to 30 Watts	35W to 55 Watts
RF POWER OUT	220 Watts	220 Watts with 30 Watt Drive	220 Watts
CURRENT/ VOLTAGE	48 Amps @ 13.8 Volts	48 Amps nom. @ 13.8 Volts	48 Amps @ 13.8 Volts
SIZE	13" X 10" X 5"	13" X 10" X 5"	12" X 3" X 5.5"
WEIGHT	13 lbs.	13 lbs.	5 lbs.

MIRAGE 70cm Amplifiers • 420-450MHz - UHF

ALL UHF MODELS FEATURE...

- All-Mode FM, SSB, CW, ATV
- Voltage 13.8 vDC
- Adjustable Delay for SSB
- Remote Control Outlet
- 50 Ω Impedance (input & output)
- Use with **MIRAGE/klm**'s 440 Antennas... Model numbers 440-6X, 440-10X and 440-16X.

	D-15-N	D-26-N	D-1010N	D-3010-N
	1W In - 15W Out	2W In - 60W Out	10W In-100W Out	30W In-100W Out
FEATURES	Special for ATV Service as well as SSB and FM All Solid State -No Relays No Remote Outlet Excellent for H/T's	Special for ATV Service as well as SSB and FM 1 Watt in will Give 51W out Excellent for H/T's	430 - 450 MHz SSB/FM Can be modified for ATV Service	430 - 450 MHz SSB/FM
SPECIFICATIONS:				
RF POWER IN	250mW to 2 Watts	400mW to 5 Watts	300mW to 15 Watts	5W-45 Watts
RF POWER OUT	2W In 20W Out	2W In 60W Out	100W	100W
CURRENT	3 Amps nominal	12 Amps nominal	20 Amps	20 Amps
SIZE	7.25" X 3.5" X 2"	8.25" X 2.5" X 7"	12" x 3" x 5.5"	12" x 3" x 5.5"
WEIGHT	1.5 lbs	4 lbs.	6 lbs.	6 lbs.

	D-1010-ATVN	D-100-ATVN
	10W In-100W Out	2W In-52W Out
FEATURES	Specially designed for amateur television Can also be used for SSB and FM 2W in will give you 52W output 420 - 450 MHz	Specifically designed for amateur television Can also be used for SSB and FM 420 - 450 MHz
SPECIFICATIONS:		
RF POWER IN	1W to 15 Watts	500mW to 5 Watts
RF POWER OUT	100W	52W
CURRENT	20 Amps	20 Amps
SIZE	12" x 2" x 5.5"	12" x 3" x 5.5"
WEIGHT	6 lbs.	6 lbs.

MIRAGE HF/VHF/UHF Preamplifiers

Model KP-1 In-Shack Model • Available for 10M 6M, 2M, 1¼M and 70cm bands. Features an in-line design with automatic RF sensed Transmit/Receive switching. The Low noise (<0.6dB) GaAs-FET circuit boosts weak receive signals up to 20-25dB or 10-15dB with internal attenuator switched in. Maximum thru transmit power is 165W RF. Requires 12-15VDC. 4¼" x 2 5/16" x 1 3/16".

Model KP-2 Mast-Mount Model • Similar to KP-1 except installed on a 4½" x 5" mounting plate and supplied with a 2 1/16" mast clamp – also has weatherproof type-N connectors. Mounts outside near antenna for maximum signal input and lowest transmission line loss. DC insertion module provides power/remote control thru the transmission line. Requires 12-15V DC. Preamp: 4¼" x 2 15/16" x 1 3/16", Module: 2⅛" x 1¼" x 1⅛".

MIRAGE Remote Control Head

Model RC-1 • Usable with most MIRAGE RF Power Amplifiers. Provides convenient Remote Control operation of On/Off, Preamp On/Off and SSB/FM mode functions. 18 foot cabling included - available in longer lengths with special order. 1¾" x 3¾ " x 2½".

Order Toll Free: 1-800-558-0411 *FAX: (414) 358-3337*

AMATEUR ELECTRONIC SUPPLY® Inc.

5710 W. Good Hope Road; Milwaukee, WI 53223 • Phone (414) 358-0333

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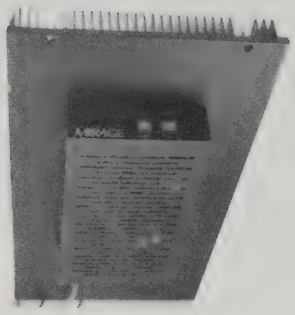
28940 Euclid Avenue	621 Commonwealth Ave.	1898 Drew Street	1072 N. Rancho Drive
Phone (216) 585-7388	Phone (407) 894-3238	Phone (813) 461-4267	Phone (702) 647-3114
1-800-321-3594	1-800-327-1917	No Toll Free Line	1-800-634-6227

Watch for Future AES® Branch Store Openings!

MIRAGE Repeater Amplifiers • VHF/UHF

ALL TRANSISTORS ARE MOUNTED ON A COPPER BASE IMBEDDED INTO THE HEATSINK. THIS UNIT IS DESIGNED FOR CONTINUOUS DUTY.



FEATURES
50, 144 AND 220 MHz Models

Cool Running — A 10" high by 19" wide full finned rack-mounted heatsink keeps the transistor temperatures low for long life. The chassis cover is perforated so air convection will keep the circuit board area cool.

Dual Protection — The amplifiers have two temperature sensors; one on the heatsink and one on the circuit board. If conditions cause either area to overheat, the amplifier will shut off until it cools down to a safe temperature.

Bypass Mode — These models will feed the exciter output straight through to the antenna in an over-temperature condition. The bypass mode can also be remotely selected by proper interfacing to the repeater controller. Either a relay contact or a TTL logic can be used to select the bypass mode or amplified mode of operation.

Reduced Relay Wear — The amps have a selectable long release time (adjustable up to 5 secs.) for the RF change-over relay. This prevents unnecessary relay action during repeater operation.

On-Site Control—The bypass mode and relay release time can be selected with built-in switches. The optional MIRAGE RC-1 remote control box can be used to switch these functions up to 18 feet away from the amplifier.

SPECIFICATIONS

MHz Freq. Range	Model Number	Watts Power Input	for	Watts Max. Cont Output	Amps Nominal Current	Power Supply (vDC)	RF Connector
50-54	A1015R	3-4		110	16-18	13.8	Teflon SO-239
144-148	B215R	1		110	16-18	13.8	Teflon SO-239
145-148	B1016R	3-4		120	16-18	13.8	Teflon SO-239
145-148	B2516R	10-12		120	14-15	13.8	Teflon SO-239
223-225	C211R	.3 - .6		80	15-16	13.8	Teflon SO-239
223-225	C1012R	5		90	16-18	13.8	Teflon SO-239
223-225	C2512R	13-15		90	13-14	13.8	Teflon SO-239
440-450	D1010RN	2-4		80	14-15	13.8	Teflon "N" UG58AU
440-450	D3010RN	10-12		80	11-13	13.8	Teflon "N" UG58AU
420-450 ATV	D100-ATVRN	.5-1		40	12-14	13.8	Teflon "N" UG58AU
420-450 ATV	D1010-ATVRN	2-4		80	15-16	13.8	Teflon "N" UG58AU

FEATURES
440 MHz and ATV Models

Cool Running — A 10" high by 19" wide full finned rack-mounted heatsink keeps the transistor temperatures low for long life. The chassis cover is perforated so air convection will keep the circuit board area cool. The RF board is low-loss Teflon for minimum dielectric heating.

Reliable — The RF change-over relay has been eliminated on this model to provide the highest order of reliability. Teflon connectors are standard on this well-designed unit.

Protection —The amplifier will shut off if conditions cause the heatsink temperature to raise to an unsafe level.

All-Mode Operation — Class AB linear operation is rated for FM, SSB, CW and ATV operation.

WARRANTY ON ALL REPEATER AMPLIFIERS

Warranty — RF power devices are guaranteed for one year against failure due to defective workmanship or materials. All other components are guaranteed for two years.

MIRAGE Watt/SWR Meters • HF/VHF/UHF

FEATURES:
- Peak or Average Reading
- Reads SWR Directly-Without Extra Charts or Graphs
- Functions: Power Forward/Reverse, Peak/Average and SWR

WARRANTY:
5 Years Parts & Labor

SPECIFICATIONS:

MODEL	MHz FREQ.	SWR SENS.	POWER RANGE
MP-1	1.8 to 30	1-2 Watts	25,200 & 2000 Watts
MP-2	50 to 200	1-2 Watts	50,500 & 1500 Watts
MP-3	420 to 450	5 Watts	5.50 & 150 Watts
MP-4	1260 to 1300	1 Watt	1.10 & 100 Watts

- Remote Coupler Mounting
- Line impedance - 50 Ω
- Insertion Loss-negligible
- Low Battery Indicator
- Triplett Meter Movement
- Weight - 3.5 lbs.
- Power requirements 9-13.6 vDC internal battery or AC adaptor jack

KLM HF Tribanders

The KT-34A and KT-34XA have become pacesetters for tribander performance. The four-element KT-34A offers an unusually compact solution for a three-band high performance installation. The six-element KT-34XA has been designed to outperform all commercially available tribanders and many monobanders as well. The high performance of these tribanders results from their innovative construction. Traps, coils, and capacitors found on conventional tribanders are replaced by lossless linear loading and high-Q air capacitors constructed of aluminum tubing. These techniques coupled with **MIRAGE/klm**'s unique dual-driven element system allow broadband performance with high gain and low VSWR remaining nearly constant across the three bands. The KT-34A can be upgraded to the KT-34XA at any time.

The boom length of the KT-34XA is doubled, and one tri-resonant and one full-size 10-meter element is added. These changes increase the gain to 11-11.3 dBd on 10M, 9-9.5 dBd on 15M, and 8.5-9 dBd on 20M.

Structurally, the KT-34A is built tough. All the aluminum, including the boom, is strong weather-resistant 6063-T832 alloy. All the hardware is stainless steel except for the mounting U-bolts. Virtually indestructible insulators support the elements and insulate them from the boom. Rotation is possible by most any ham rotor. Wind balance and wind survival are excellent.

The same high efficiency is now available in **MIRAGE/klm**'s NEW! KT-31 DIPOLE for the 10, 15 and 20 Meter bands.

KT-31 DIPOLE

NEW

ELECTRICAL

Bandwidth	20, 15, & 10 Meters
VSWR	Less than 1.5:1
Feed Imp	50 Ω
Balun	3-60-1:1

MECHANICAL

Length	24' - 6"
Weight	9 lbs.
Mast	2 in. (5.08 cm)
Windload	.85 sq. ft. (.08 sz.M)

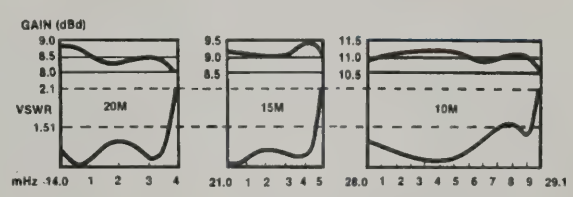
KT-34XA

ELECTRICAL

Bandwidth	14.0-14.350 MHz
	21.0-21.450 MHz
	28-29.7 MHz
Gain	8.5-9 dBd
	9-9.5 dBd
	11-11.3 dBd
VSWR	Less than 1.5:1
F/B	Greater than 20 dB
F/S	Greater than 40 dB
Feed Imp	50 Ω with balun
Balun	4:1, 5 kW PEP

MECHANICAL

Element Length	24 ft.
Boom Length	32 ft.
Turn Radius	21.5 ft.
Windload	9 sq. ft.
Weight	68 lbs.
Mast	2 in. O.D.



GAIN vs VSWR

*Also available with a heavy duty boom at additional cost.

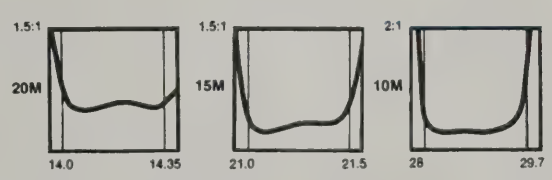
KT-34A

ELECTRICAL

Bandwidth	14.0-14.350 MHz
	21.0-21.450 MHz
	28-29.7 MHz
Gain	7 dBd ±0.3 dB
VSWR	Less than 1.5:1
F/B	Greater than 20 dB
F/S	Greater than 30 dB
Feed Imp	50 Ω with balun
Balun	4:1, 5 kW PEP

MECHANICAL

Element Length	24 ft.
Boom Length	16 ft.
Turn Radius	16 ft.
Windload	6 sq. ft.
Weight	45 lbs.
Mast	2 in. O.D.



VSWR

KLM WARC HF Tribanders • Vertical/Dipole

	12-17-30V	12-7-30D
ELECTRICAL:		
BANDWIDTH	30, 17, & 12 Meters	30, 17, & 12 Meters
VSWR	Less than 1.5:1	1.5:1
FEED IMPEDANCE	50 Ω	50 Ω
BALUN	—	3-60 1:1
MECHANICAL:		
LENGTH/HEIGHT	21'-3" — (6.43 M)	39' - 8.5" — (12.10 M)
WEIGHT	6.5 lbs.	13 lbs.
MAST	2 in. (5.08 cm)	2 in. (5.08 cm)
WINDLOAD	1 sq. ft. (0.093 sq. M)	2 sq. ft. (0.186 sq. M)

KLM VHF Yagis

6 METERS

ELECTRICAL:	6M-14	6M-10	6M-7LB Long Boom	6M-7LD Light Duty	6M-5
BANDWIDTH	50-52 MHz	50-52 MHz	50-52 MHz	50-51 MHz	50-52 MHz
GAIN	14.0 dBd	11.7 dBd	11.5 dBd	10.5 dBd	9.7 dBd
VSWR Less than	1.5:1, 50-51 MHz	1.5:1, 50-51 MHz	15.5:1, 50-51 MHz	1.5:1	1.5:1
F/B Greater than	26 dB	25 dB	30 dB	30 dB	30 dB
BEAMWIDTH	E=33°, H=36°	E=40°, H=45°	E=39°, H=43°	E=39°, H=43°	E=40°, H=44°
FEED IMPEDANCE	50 Ω	50 Ω	50 Ω	50 Ω,	50 Ω,
BALUN	4:1, 5 kW PEP	4:1, 5 kW PEP	4:1, 5 kW PEP	4:1, 5 kW PEP	4:1, 5 kW PEP
WAVELENGTH	3.10	1.74			
MECHANICAL:					
ELEMENT LENGTH	9.75 ft.	9.75 ft.	61 in.	61 in.	57.75 in.
BOOM LENGTH	61 ft.	34 ft., 2 in.	25.75 ft.	20 ft.	11.75 ft.
TURN RADIUS	35.75 ft.	19.5 ft.	16 ft.	13 ft.	7.5 ft.
WINDLOAD	10 sq. ft.	4.4 sq. ft.	3 sq. ft.	2.5 sq. ft.	1.7 sq. ft.
WEIGHT	73 lbs.	29 lbs.	22 lbs.	12 lbs.	9 lbs.
MAST	2 in.	2 in.	2 in.	2 in.	2 in.

6M-7LB Long Boom

2M-16LBX

2 METERS

ELECTRICAL:	2M-20 LBX	2M-16 LBXM	2M-13 LBA	2M-11 X	2M-8	2M-4 X
BANDWIDTH	SPEC. 144-146 USABLE 143-148 144-15.5 dBd	SPEC. 144-146 USABLE 143-148 144-14.5 dBd	144-148 MHz	SPEC. 144-146 USABLE 143-148	144-148 MHz	144-148 MHz
GAIN	145-15.5 dBd 146-15.4 dBd 147-15.3 dBd 148-13.7 dBd	145-14.5 dBd 146-14.4 dBd 147-14.3 dBd 148-13.2 dBd	13.3 dBd	12.5 dBd	10.3 dBd	8.5 dBd
VSWR Less than	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.5:1
F/B Greater than	30 dB	20 dB	20 dB	20 dB	30 dB	20 dB
BEAMWIDTH	E=26°, H=28°	E=26°, H=29°	E=28°, H=33°	E=30°, H=34°	50°	62°
FEED IMPEDANCE	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
BALUN	4:1, 2 kW Coax	4:1, 2 kW Coax	4:1, 2 kW Coax	4:1, 2 kW Coax	1:1 Sleeve, 2 kW	4:1, 2 kW Coax
MECHANICAL:						
ELEMENT LENGTH	40-5/8 in.	40-5/8 in.	40-5/8 in.	40-5/8 in.	40-5/8 in.	40-5/8 in.
BOOM LENGTH	38.5 ft.	28 ft.	21.5 ft.	15 ft., 4 in.	7.25 ft.	4.2 ft.
TURN RADIUS	21 ft., 10 in.	15 ft. - 5 in.	13 ft.	9 ft.	4 ft.	4 ft.
WINDLOAD	2.19 sq. ft.	1.75 sq. ft.	1.6 sq. ft.	1.38 sq. ft.	.65 sq. ft.	.25 sq. ft.
WEIGHT	17 lbs.	10 lbs.	9 lbs.	5.5 lbs.	4 lbs.	2 lbs.
MAST	2 in.	2-1/8 in. max.	2 in.	2-1/8 in. max.	2 in.	2 in.

220 MHz

ELECTRICAL:	220-22 LBX	220-14X	220-7
BANDWIDTH	220-225 MHz	220-225 MHz	219-226 MHz
GAIN	15.6 dBd	13.5 dBd	8.8 dBd
VSWR Less than	1.5:1	1.5:1	1.5:1
F/B RATIO Greater than	20 dB	20 dB	20 dB
F/S RATIO Greater than	30 dB	30 dB	30 dB
BEAMWIDTH	E=22°, H=25°	E=28° H=32°	E=54° H=60°
FEED IMPEDANCE	50 Ω	50 Ω	50 Ω
BALUN	4:1 Coax. 2 kW PEP	4:1 Coax. 2 kW PEP	1:1 Sleeve 2kW
MECHANICAL:			
ELEMENT LENGTH	30 in.	30 in.	30 in.
BOOM LENGTH	29.9 ft. (6.65 wavelengths)	14 ft. 7 in. (3.27 wavelengths)	4.75 ft.
TURN RADIUS	16 ft. 4 in.	8 ft.	4 ft.
WINDLOAD	2.0 sq. ft.	1.33 sq. ft.	.73 sq. ft.
MOUNTING	Center	Center	Rear/Center
WEIGHT	10 lbs.	6.5 lbs.	9 lbs.
MAST	2-1/8" max.	2-1/8" max.	1-1/2 in.

432 MHz

	432-30 LBX	432-20 LBX
BANDWIDTH	430-440 MHz	425-440 MHz
GAIN	17.3 dBd	15.3 dBd
VSWR	1.2:1	1.2:1
F/B RATIO	20 dB	20 dB
F/S RATIO		
BEAMWIDTH	E=19° H=20°	E=26° H=28°
FEED IMPEDANCE	50 Ω	50 Ω
BALUN	1:1 Sleeve, 2 kW	1:1 Sleeve, 2 kW
MECHANICAL:		
ELEMENT LENGTH	14 in. max.	14 in. max.
BOOM LENGTH	21 ft. 11 in. (9.6 wavelength)	12 ft. 4 in. (5.42 wavelengths)
TURN RADIUS	12 ft. 4 in.	7 ft.
WINDLOAD	1.72 sq. ft.	0.9 sq. ft.
MOUNTING	Center	Center
WEIGHT	9 lb.	5 lbs.
MAST	2-1/8 in. max.	1-1/2 in.

432-20 LBX

KLM UHF Yagis • Special for ATV

440 MHz

	440-16X	440-10X	440-6X
ELECTRICAL:			
BANDWIDTH	420-450 MHz	420-470 MHz	420-470 MHz
GAIN	14.0 dBd	11.5 dBd	8.9 dBd
VSWR	Less than 1.2:1	1.2:1	1.2:1
F/B	Greater than 20 dB	20 dB	20 dB
FEED IMPEDANCE	50 Ω	50 Ω	50 Ω
BALUN	Coax "N" 1:1, 2kW	Coax "N" 1:1, 2kW	Coax "N" 1:1 2kW
BEAMWIDTH	E=28°, H=32°	48°	60°
MECHANICAL:			
ELEMENT LENGTH	14 in. max.	14 in. max.	14 in. max.
BOOM LENGTH	12 ft.	4.75 ft.	28 in.
TURN RADIUS	6 ft.	4.90'	2 ft., 5 in.
WINDLOAD	0.74 sq. ft.	0.53 sq. ft.	0.2 sq. ft.
WEIGHT	7.5 lbs.	4 lbs.	1.2 lbs.
MAST	1-1/2 in.	1-1/2 in.	1-1/2 in.
MOUNT	Center	Rear or Center	Rear or Center

440 MHz: Use with our 70cm Amplifiers on page 3 for ATV, FM, and SSB operations.

1296 MHz

	1.2-44LBX	1.2-24LBX	1.2-15LBX
ELECTRICAL:			
BANDWIDTH	1260-1300 MHz	1260-1300 MHz	1260-1300 MHz
GAIN	18.2 dBd	16.2 dBd	13.6 dBd
VSWR	1.5 to 1	1.5:1	1.5:1
F/B	39 dB	39 dB	39 dB
FEED IMPEDANCE	50 Ω	50 Ω	50 Ω
BALUN	4:1 Rigid Coax	4:1 Rigid Coax	4:1 Rigid Coax
BEAMWIDTH	E=16°, H=18°	E=22°, H=24°	E=28°, H=30°
MECHANICAL:			
ELEMENT LENGTH	4.5 in.	4.5 in.	4.5 in.
BOOM LENGTH	12'4"	75-3/4 in.	42 in.
TURN RADIUS	84 in.	38 in.	43 in.
WINDLOAD	1 sq. ft.	1/2 sq. ft.	1/4 sq. ft.
WEIGHT	10 lbs.	7 lbs.	4 lbs.
MAST	2" O.D.	up to 2" O.D.	up to 2" O.D.
MOUNT	Center	Center	Rear

1296 MHz: These can be used in circular mode.

440-16X

1.2 - 44 LBX

KLM HF Verticals

	160V VERTICAL	40-10V VERTICAL	SSV 80-40-15
ELECTRICAL:			
BANDWIDTH	1.8-2.0 MHz — x 20 kHz	7, 14, 21, 28 MHz	75/80, 40, 15M+
VSWR	Less than 1.5:1	1.5:1	1.5:1
FEED IMP	50 Ω	50 Ω	50 Ω
MECHANICAL:			
HEIGHT	24 ft.	26.5 ft.	60-65 ft.
WINDLOAD	1.4 sq. ft.	1.8 sq. ft.	100 MPH + Wind Survival
WEIGHT	10 lbs.	23 lbs.	88 lbs.
MAST	2 in.	2 in.	3 anchors set in cement

KLM VHF/UHF Verticals

MIRAGE/klm offers a selection of omnidirectional stand-alone vertical antennas. These antennas will provide outstanding performance without the need of a ground plane. The JV-6 and the JV-2 will give 5 dBd more gain than a ground plane, while the JV-2X, JV-220X, and the JV-440X give a 7 dBd improvement.

JV-2

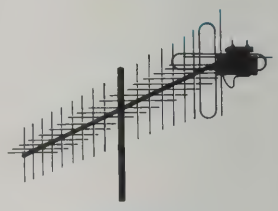
JV-440X

	JV-10	JV-6	JV-2	JV-2X	JV-220X	JV-440X
ELECTRICAL:						
BANDWIDTH	27-30 MHz (x 250 kHz)	50-54 MHz (x 800 kHz)	144-148 MHz (x 2 MHz)	144-148MHz (x 3 MHz)	219-226 MHz (x 4 MHz)	420-470 MHz
GAIN	3 dB/gnd plane	5 dB/gnd plane	5 dB/gnd plane	7 dB/gnd plane	7 dB/gnd plane	7 dB/gnd plane
VSWR	Less than 1.5:1	1.5:1	1.2:1	1.5:1	1.5:1	1.5:1
FEED IMPEDANCE	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω	50 Ω
MECHANICAL:						
ELEMENT LENGTH	27 ft., 5 in.	15 ft.	60 in.	11 ft.	7 ft., 4 in.	7 ft., 6 in.
WEIGHT	10 lbs.	5 lbs.	1.5 lbs.	2.1 lbs.	2 lbs.	1.1 lbs.
MAST	2 in. max.	2 in. max.	2 in. max.	2 in. max.	2 in. max.	2 in. max.

KLM Satellite Circulars • VHF/UHF

	2M-14C	2M-22C	435-18C	435-40CX
ELECTRICAL:				
BANDWIDTH	144-150 MHz	144-150 MHz	420-450 MHz	420-450 MHz
GAIN	11 dBc	13 dBc	12 dBc	15.2 dBc
VSWR	Less than 1.2:1	1.5:1	1.5:1	1.5:1
F/B	Greater than 20 dB	20 dB	20 dB	20 dB
FEED IMP	50 Ω	50 Ω	50 Ω	50 Ω
BEAMWIDTH	38°	34°	34°	25°
ELLIPTICITY	3 dB max	3 dB max	3 dB max	3 dB max
BALUN	(2) 4:1 coax, 2 kW*	(2) 4:1 Coax, 2 kW*	(2) 4:1 Coax, 2 kW*	(2) 4:1 Coax, 2 kW*
MECHANICAL:				
ELEMENT LENGTH	40.625 in. max	40.625 in. max	13.25 in. max	13.625 in. max
BOOM LENGTH	12 ft., 9 in.	19 ft., 1 in.	7 ft., 4 in.	14 ft., 7 in.
TURN RADIUS	7 ft.	11 ft.	7 ft.	8 ft., 9 in.
WINDLOAD	1.25 sq. ft.	1.85 sq. ft.	0.5 sq. ft.	1.16 sq. ft.
WEIGHT	7.5 lbs.	11 lbs.	4.5 lbs.	10 lbs.
MAST	2 in.	2 in.	1.5 in.	1.5 in.
MOUNT	Center	Center	Rear	Center
POLARITY	Circular R.H and L.H. switchable using CS-3		Circular R.H and L.H. switchable using CS-2	

2M-22C



435-40CX

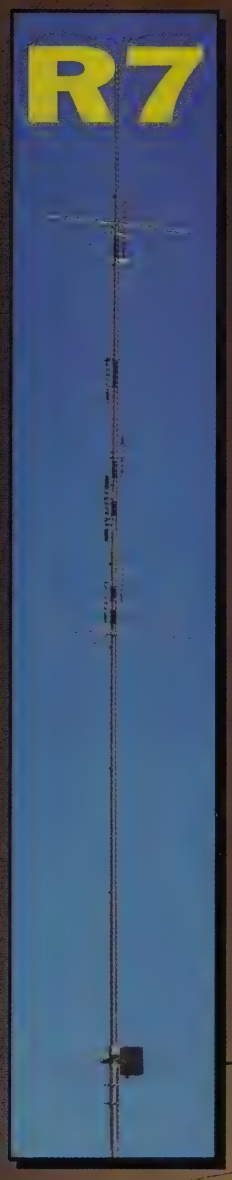
* Derate to 250W when using Switchers (supplied)

Russian soldiers checking out AES Catalog!

AES Store Locations	Phone	Toll Free	FAX
Milwaukee, WI 53223; 5710 W. Good Hope Road	(414) 358-0333	1-800-558-0411	(414) 358-3337
Wickliffe, OH 44092; 28940 Euclid Avenue	(216) 585-7388	1-800-321-3594	(216) 585-1024
Orlando, FL 32803; 621 Commonwealth Avenue	(407) 894-3238	1-800-327-1917	(407) 894-7553
Clearwater, FL 34625; 1898 Drew Street	(813) 461-4267		(813) 443-7893
Las Vegas, NV 89106; 1072 N. Rancho Drive	(702) 647-3114	1-800-634-6227	(702) 647-3412

10, 12, 15, 17, 20, 30 & 40 Meters

There's never been an antenna like this!



Look all you want–you won't find another multiband vertical with the quality, features and performance of the Cushcraft R7. The R7 is a combination of exceptional half-wave performance and user friendly features such as compact size, no moving parts or ground radials and mount-anywhere convenience.

R7 puts the fun back into ham radio. It can be assembled and on the air in less than an hour. Its convenient size and lack of radials make it easy to locate for home, vacation or portable stations. Mount it anywhere from ground level to tower top.

JOIN THOUSANDS OF SATISFIED OWNERS.

"Tropical storm Zelda struck Kwajalein on Thanksgiving Day . . . Harbor Control clocked gusts at 87 knots (100 mph) . . . As the beams blew down, my R7 vertical stayed up. I maintained communications for the entire storm." V73CT

"My first QSO was ZA1A in Albania with my R7." NE8Z / HC1MD

"Metalwork, machining and traps well made . . . Assembly was straight forward and easy." WX6W

SPECIFICATIONS

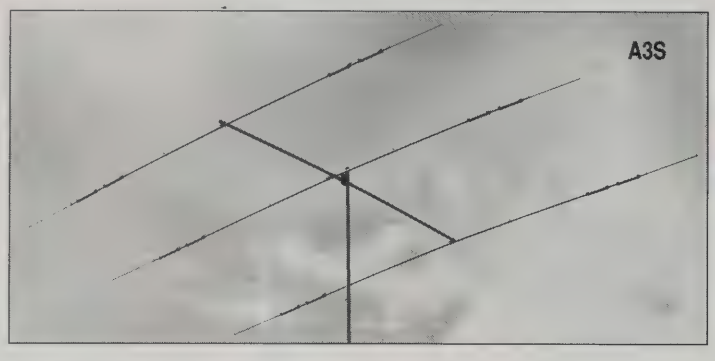
Frequency, MHz	28, 24, 21, 18, 14, 10, 7
Gain, dBi	3
Electrical Wavelength	Half-wave
SWR 2:1 Bandwidth	10m-2 MHz / 12m-100 KHz 15m-450 KHz / 17m-100 KHz 20m-250 KHz / 30m-25 KHz 40m-75 KHz
Power Rating, Watts PEP	1500
Radiation Angle, degrees	18
Frequency Selection	Automatic
Horizontal Radiation Pattern, degrees	360
Height, ft (m)	22.5 (6.9)
Mast Size Range, in (cm)	1.5-1.75 (3.8-4.4)
Wind Load, ft² (m²)	2.25 (.21)
Weight, lb (kg)	12.3 (5.6)
Counterpoise Radials Supplied	7
Wind Survival, mph (kph)	80 (129)

cushcraft CORPORATION

WHERE PERFORMANCE IS A TRADITION

48 PERIMETER ROAD, P.O. BOX 4680, MANCHESTER, NH 03108 USA
TELEPHONE: 603-627-7877 • TELEX: 4949472 • FAX: 603-627-1764

AVAILABLE THROUGH DEALERS WORLDWIDE



World Ranger

MULTIBAND HF YAGIS 10, 12,15, 17, 20, 30, 40 METERS

A3S, A3WS, A4S BEAMS

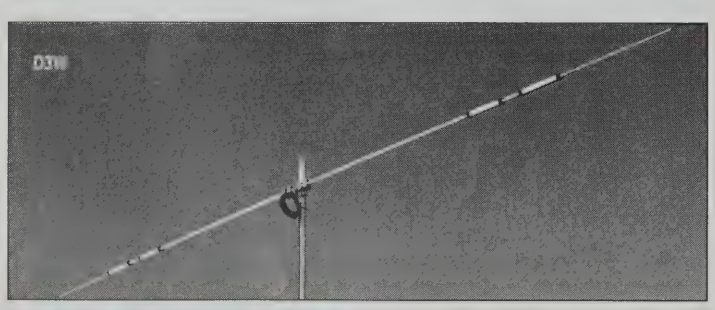
Our three and four element tribanders provide the versatility and performance that you need for reliable communication around the world. Cushcraft's World Rangers are made to last with 6063-T832 aluminum tubing, weatherproof traps, stainless steel hardware and fiberglass insulators. They are designed with fewer parts for easier assembly, lower weight and less windload.

A4S is the true, high performance tribander. Our best selling tribander, the A3S is a real power-house in a small space. 40 meters will come alive by adding one of our kits to the driven element of your A3S or A4S. The all new A3WS gives full performance on 12 and 17 meters and with the A103 add on kit will also cover 30 meters.

MODEL	A4S	A3S	A3WS
Frequency, MHz	28, 21, 14	28, 21, 14	24, 18
No. Elements	4	3	3
Forward Gain, dBd	8.9	8	8
Front to Back Ratio, dB	25	25	25
Power, Watts PEP	2000	2000	2000
Boom Length, ft	18	14	14
Longest Element, ft	32	27.8	25.1
Turning Radius, ft	18.4	15.5	14.4
Max. Mast Size, in	2	2	2
Wind Load, ft²	5.5	4.4	4.1
Weight, lb	37	27	22.5

WORLD RANGER 30 and 40 METER ADD-ON KITS

A 103			10MHz
A 743, A 744	7MHz	10MHz	
Driven Element with Adapter Kit, ft	33.2 min/35.3 max	27.1 min/28.4 max	32.1
Windload, ft²	0.6	0.3	0.5
Bandwidth, KHz	125	50	50
Power, Watts PEP	2000	2000	2000
Weight, lb	3.5	2.3	3.3



ROTATABLE DIPOLES

Cushcraft rotatable dipoles come single and multi-band. They feature high performance traps and heavy wall tubing. They can be mounted high and away from trees for better performance than a wire dipole. D3W is the perfect answer for the WARC bands.

MODEL	D40	D4	D3	D3W
Frequency, MHz	7	28, 21,14,7	28,21,14	24,18,10
Bandwidth, KHz	200	>350*	>500	>200
Power, Watts PEP	2000	2000	2000	2000
Length, ft	42.3	35.8	25.8	34.0
Wind Load, ft²	1.3	1.3	0.9	0.9
Weight, lb	12	13	9	11

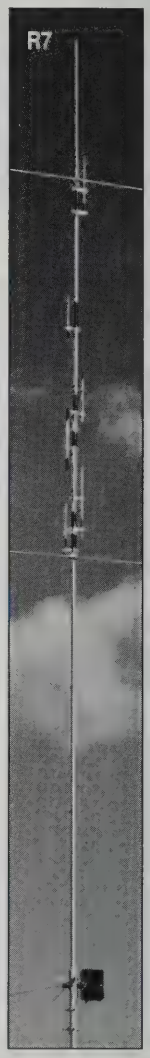
* >125 KHz @ 7

Multiband HF Verticals

10, 12, 15, 17, 20, 30, 40, 80 METERS

R5, R7 HALF-WAVE VERTICALS 7, 10, 14, 18, 21, 24, 28 MHz

IT'S THE ONE YOU'VE ASKED FOR. Amateur radio's most popular vertical design now gives you 30 & 40 meters with NO GROUND RADIALS! Only 22.5 feet tall, R7's small footprint and ground independence give you "mount-anywhere" flexibility. Assembly is a snap. Automatic frequency selection and 7 short counterpoise rods let you concentrate on DXing, contesting or rag-chewing from your apartment, condo or motor home. Convenience is only one reason to own an R7. The main reason is performance. Like the R5, your only connection to the R7 is the coax to your rig. Experience amateur radio's highest performance-to-size ratio—now on 30 & 40 meters—with the Cushcraft R7.



MODEL	R5	R7
Frequency, MHz	28,24,21,18,14	28,24,21,18,14,10,7
Gain, dBi	3	3
Electrical Wavelength	Half-wave	Half-wave
SWR, 2:1 Bandwidth	Full Band	Full Band*
Power, Watts PEP	1800	1800
Radiation Angle, Deg.	16	16
Height, ft	17	22.5
Max. Mast Size, In	1.75	1.75
Wind Load, ft²	1.4	2.25
Weight, lb	8.7	12.3

* Except 20M >150 KHz /40M >75 KHz

AP8A EIGHT BAND

The next generation eight band vertical with thick wall tubing and high tensile fiberglass for exceptional strength and longevity. By utilizing compact traps designed for full power, maximum bandwidth and automatic bandswitching makes this the ideal vertical for 80 through 10 meters. Add the compact APR18A radial kit with precut wire and connecting lugs and you're ready to go.

MODEL	AP8A
Frequency, MHz	28, 24,21,18,14,10,7,3.5
Electrical Wavelength	1/4
SWR, 2:1 Bandwith	Full Band Except 40M >150KHz / 80M > 80KHz
Power, Watts PEP	2000
Radiation Angle, Deg.	18
Height, ft	<26
Max. Mast Size, In	1.75
Wind Load, ft²	1.7
Weight, lb	9.5
Radials Required	Normally
Radial Kit Available	Yes, APR 18

AV3 THREE BAND / AV5 FIVE BAND

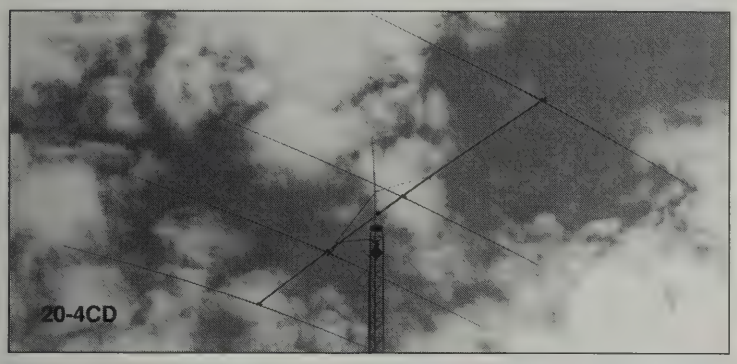
The AV5 works with the popular 10, 15, 20, 40 and 80 meter bands with broad bandwidth and full legal power. Our AV3 handles 10, 15 and 20 meter with fine performance and easy assembly. Add our APR18 radial kit which includes pre-cut wire and connecting lugs.

MODEL	AV3	AV5
Frequency, MHz	28, 21,14	28, 21, 14, 7, 3.5
Electrical Wavelength	1/4	1/4
SWR, 2:1 Bandwidth	Full Band Except 40M > 150KHz	Full Band Except 80M > 70KHz
Power, Watts PEP	2000	2000
Radiation Angle, Deg.	18	18
Height, ft	14	25
Max. Mast Size, In	1.75	1.75
Wind Load, ft²	1.0	1.9
Weight, lb	5	8
Radials Required	Normally	Normally
Radial Kit Available	Yes, APR 18	Yes, APR 18

Skywalker Monoband Yagis

10, 15, 20, 40 METERS

More contacts, less waiting, less interference, and a better signal at the other end are yours with a Skywalker! Construction features include stainless steel fasteners, pinned booms and heavy wall heat treated 6063-T832 aluminum tubing. All Skywalkers are full bandwidth (except for 40-2CD which is 200 KHz).



MODEL	10-4CD	10-3CD	TEN-3
Frequency, MHz	28.0-29.7	28.0-29.7	28.0-29.7
No. Elements	4	3	3
Forward Gain, dBd	10.0	8.0	8.0
Front to Back Ratio, dB	30	30	25
Power, Watts PEP	2000	2000	2000
Boom Length, ft	16	10	8
Longest Element, ft	17.6	17.7	18.0
Turn Radius, ft	11.5	10.0	9.8
Max. Mast Size, in	2.0	2.0	2.0
Wind Load, ft²	3.1	2.3	2.0
Weight, lb	18	11	9.9

MODEL	15-4CD	15-3CD	20-4CD	20-3CD	40-2CD
Frequency, MHz	21.0-21.45	21.0-21.45	14.0-14.35	14.0-14.35	7.0-7.3
No. Elements	4	3	4	3	2
Forward Gain, dBd	10.0	8.0	10.0	8.0	5.5
Front to Back Ratio, dB	30	30	30	30	20
Power, Watts PEP	2000	2000	2000	2000	2000
Boom Length, ft	20	14	32	20	23
Longest Element, ft	23.3	23.3	36.1	36.0	43
Turn Radius, ft	15.4	13.5	23.8	20	23.9
Max. Mast Size, in	2.0	2.0	2.0	2.0	2.0
Wind Load, ft²	4.5	3.4	8.1	5.5	6.4
Weight, lb	25	20	55	30	44

Oscar

Here's the system that will get you up and running in a hurry. Cushcraft's AOP-1 includes our 416TB uplink, A144-20T downlink, A14-TMB mounting boom, and all of the hardware for quick assembly and installation.

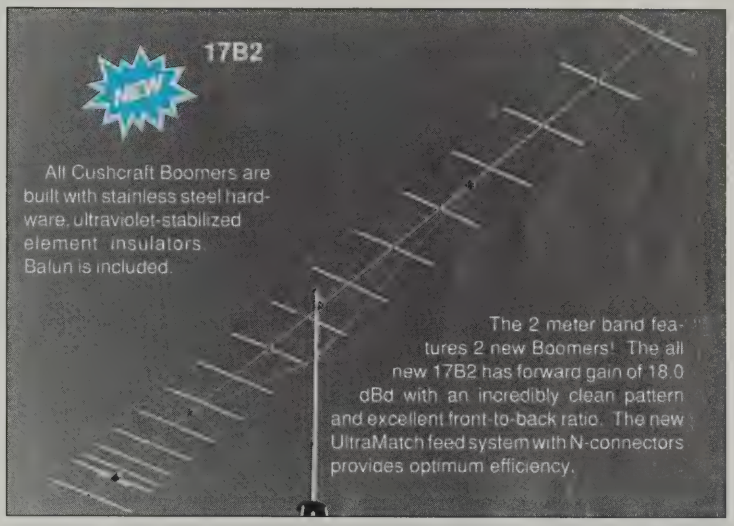
OSCAR operation will be more fun with the optional remote polarity switch (PS4) mounted right on the 416TB. You will access satellites having either left or right polarization.

MODEL	A144-10T	A144-20T	416TB
Frequency, MHz	145.9	145.9	435
No. Elements	2 x 5	2 x 10	2 x 8
Forward Gain, dBd	10.5	12.2	12.5
Front to Back Ratio, dB	20	20	20
Power, Watts PEP	800	800	500
Boom Length, ft	5.8	10.8	6.7
Longest Element, In	40	40	13.3
Turn Radius, ft	3.4	5.8	6.7
Mast Size, In	1.5	1.5	2.0
Wind Load, ft²	0.7	1.4	0.5
Weight, lb	3.5	6.6	4.9

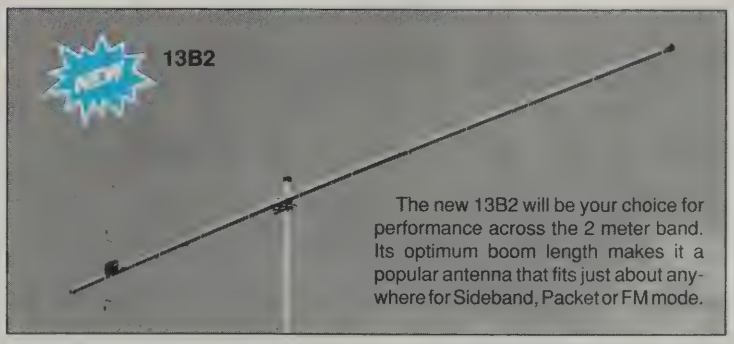
Boomer Sideband/CW Yagis

2 METERS

Antennas so efficient, powerful and successful they defy comparison. They have established new VHF/UHF distance records and their computer design has become the standard of comparison for others to copy.



Model	13B2	17B2	617-6B	424B	220B
Frequency, MHz	144-148	144-145	50-51	424-435	222-223
No. Elements	13	17	6	24	17
Forward Gain, dBd	15.8	18.0	14.0	18.2	17.2
Front to Back Ratio, dB	26	26	30	30	30
Power, Watts PEP	2000	2000	2000	2000	2000
Boom Length, ft	15	31	34	17.4	19
Longest Element, In	39.75	40.75	117	13	26
Turn Radius, ft	8.9	17.25	17.7	10	9
Max. Mast Size, In	2.0	2.0	2.0	2.0	2.0
Wind Load, ft²	1.8	3.9	4.8	2.3	2.6
Weight, lb	6.7	15.8	26	4.5	10.5



Boomer FM Yagis

1¼, 2 METERS

New 13B2 and 26B2 give you cleaner patterns with even greater strength. New element spacings and improved weatherproof feed systems make them great for local or distant DX on FM. For 220 MHz use the 224WB or 225WB for superior performance.

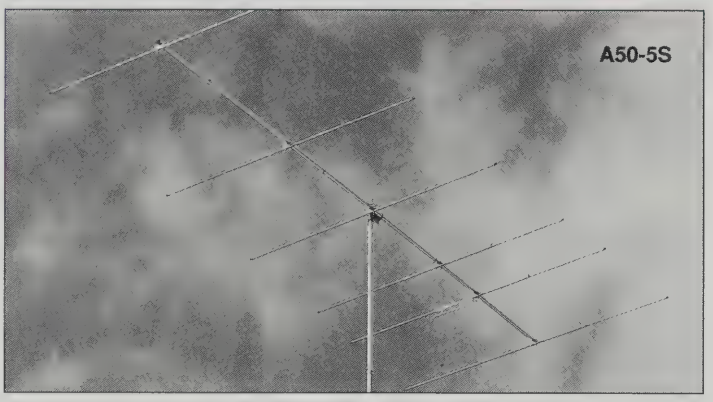
MODEL	124WB	13B2	26B2	224WB	225WB
Frequency, MHz	144-148	144-148	144-148	222-225	222-225
No. Elements	4	13	26	4	15
Forward Gain, dBd	10.2	15.8	18.8	10.2	15.5
Front to Back Ratio, dB	24	26	26	24	24
Power, Watts PEP	2000	2000	2000	2000	2000
Boom Length, ft	4	15	15	3	10
Longest Element, ft	40.75	39.75	39.75	26.7	26.3
Turn Radius, ft	4	8.9	10.4	3	5.8
Max. Mast Size, in	2	2	2	2	2
Wind Load, ft²	0.3	1.8	4.84	0.2	1.0
Weight, lb	3	6.7	21.5	1.7	5.3

Sideband Yagis

70 CM, 2, 6, METERS

The performance of these budget-priced antennas will surprise you! They are lighweight, durable, and will have you on the air in a single afternoon! Good bandwidth, tapered elements, Reddi Match for direct 50 Ohm feed, and a moisture-sealing vinyl connector boot are some major features of these fine antennas.

MODEL	A50-3S	A50-5S	A50-6S	A144-11	A144-7	A430-11
Frequency, MHz	50-54	50-54	50-54	144-146	144-146	430-435
No. Elements	3	5	6	11	7	11
Forward Gain, dBd	8	10.5	11.2	13.2	11.1	13.2
Front to Back Ratio, dB	20	24	26	20	20	20
Power, Watts PEP	1000	1000	1000	1000	1000	350
Boom Length, ft	6	12	20	12	8.2	4.7
Longest Element, in	117	117	117	40	40	14
Turn Radius, ft	6	7.5	11	6.8	4.9	2.6
Max. Mast Size, In	2	2	2	1.5	1.5	1.5
Wind Load, ft²	1.8	2.7	4.5	1.2	0.8	0.4
Weight, lb	7	11	18	6	4	3



Ringos

70 CM, 1¼, 2, 6, 10 METERS

If you want a combination of compact size, wide bandwidth and a low radiation angle, these economical antennas are just for you. Since radials are not needed, you can even use our Ringos indoors. Ringos are 1/2 wavelength and include lightning protection.

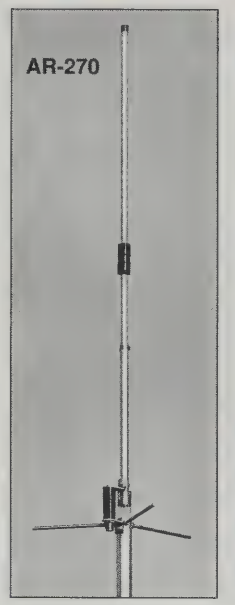
MODEL	AR2	AR6	AR10	AR220	AR450
Frequency, MHz	135-160	50-54	28-29.7	222-225	440-460
SWR 2:1 Bandwidth, MHz	10	2	>1.5	10	20
Gain, dB	3.75	3.75	3.75	3.75	3.75
Power, Watts FM	1000	1000	1000	500	500
Radiation Angle, Deg	16	16	16	16	16
Height, ft	3.9	10.1	17.6	2.6	1.4
Max. Mast Size, in	1.25	1.25	1.25	1.25	.88
Wind Load, ft²	0.2	0.4	1.7	0.2	0.1
Weight, lb	1.5	2.5	4	1.2	1.0

Ringo Ranger

2 METERS

This is the antenna that combines good gain with compact size. If space does not allow extra height or decoupling radials, the ARX-2 is for you.

Gain 4.5 dB, frequency range 135-160 MHz, SWR 2:1 bandwidth greater than 6 MHz, height 112", wind area .33 ft², max. mast size 1.25", weight 4 lbs, power handling 1000 Watts.



Dual Band Ringo

70 CM, 2 METERS

Experience the performance and appearance advantages of an all aluminum dual band antenna. AR-270 incorporates Ringo Ranger technology in a lightweight and durable design with all stainless steel hardware.

With its two section vertical element and three short radials the antenna is very easy to install anywhere. The weather sealed phasing coil and base matching network eliminate stray RF currents while providing a very low angle of radiation.

A simple 50 Ohm cable connection is all you need to experience the full performance of your dual band 2 meter/70 cm transceiver with the new AR-270.

MODEL	AR270	
Frequency, MHz	144-148	435-450
SWR 2:1 Bandwidth	>4	>15
Gain, dB	3.7	5.5
Power, Watts FM	250	250
Height, ft	3.75	
Max. Mast Size, in	2.0	
Wind Load, ft²	0.3	
Weight	2.0	

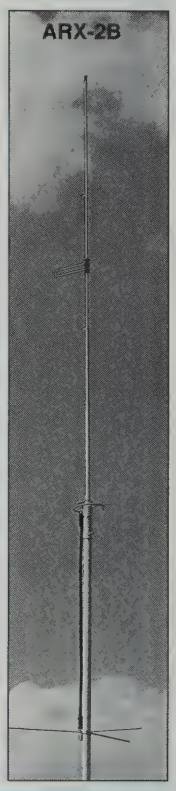
Ringo Ranger II

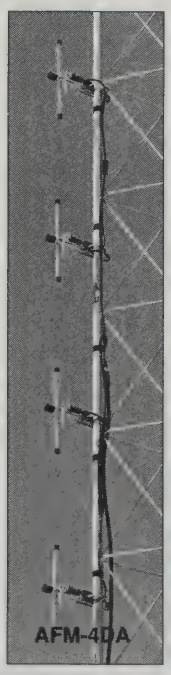
70 CM, 1¼, 2 METERS

Our Ringo Ranger II has more gain, less windload, and more mechanical integrity than other two meter antennas. You will quickly appreciate the benefits of this amazing antenna! The Ringo Ranger II has built-in lightning protection, UV stabilized insulators, heavy wall tubing, improved decoupling radials to eliminate feedline radiation, and all-weather performance.

It's the performer. Over 500,000 have been sold!

MODEL	ARX2B	ARX220B	ARX450B
Frequency, MHz	135-160	222-225	435-450
SWR 2:1 Bandwidth, MHz	>3	>5	>10
Gain, dB	7.0	7.0	7.0
Power, Watts FM	1000	500	500
Radiation Angle, Deg	7	7	7
Height, ft	14.0	9.3	4.9
Max. Mast Size, in	1.25	1.25	.88
Wind Load, ft²	0.5	0.3	0.2
Weight, lb	6	5	1





Four Poles

70 CM,1¼, 2 METERS

Cushcraft's four 1/2 wave dipole array is perfect for your repeater or as a powerful base antenna. Strong through-the-boom dipole mounting ensures long life and superior electrical characteristics. The dipoles mount to your tower's legs or on a separate support mast (not included). They can be arranged for omni or elliptical patterns.

MODEL	AFM-4DA	AFM-24DA	AFM-44DA
Frequency, MHz	144-148	222-225	435-450
SWR 2:1 Bandwidth	>4	>5	>15
Gain, dBd	9 offset/6 omni	9 offset/6 omni	9 offset/6 omni
Power, Watts FM	500	500	250
Radiation Angle, Deg	6	6	6
Height, ft	23	15	8
Max. Mast Size, in	2.0	2.0	2.0
Wind Load, ft²	2.5	1.9	1.1
Weight	7	6	5

Mobiles

70 CM, 1¼, 2, 6, 10 METERS

Our mobiles feature silver-plated coils, stainless steel springs, non-seize hardware, and shock proof coil cases. Plus RG58AU coax and silver-plated connectors for maximum signal transfer from your rig to the antenna.Our VHF models feature 3 dB gain and 5/8 wave electrical length. UHF mobiles provide 5 dB gain.

Each type is offered with a choice of three mounts. Our popular magnet mounts have 90 pounds of holding power to keep your antenna secure. The trunk-lip mounts are super easy to install on your trunk lid. And if you want permanent mounting, try our 3/4" hole-mount models.

Our compact quarterwave magnetic mount mobile with UltraLink cable is available for 2 meters and 70 centimeters.

3 dB Gain VHF / 5 dB Gain UHF

Model No.	Frequency MHz	Whip in	Description
CS28M	28-30	49	Magnetic
CS50M	46-54	49	Magnetic
CS50T	46-54	49	Trunk Lip
CS50	46-54	49	3/4" Hole
CS-147M	144-174	49	Magnetic
CS-147T	144-174	49	Trunk Lip
CS-147	144-174	49	3/4" Hole
CS220M	222-225	33	Magnetic
CS220T	222-225	33	Trunk Lip
CS220	222-225	33	3/4" Hole
CS450M	435-470	29.5	Magnetic
CS450T	435-470	29.5	Trunk Lip
CS450	435-470	29.5	3/4" Hole

Quarterwave

CS1147M	144-148 MHz Mag Mount
CS1450M	435-450 MHz Mag Mount

CS-270M DUAL BAND MOBILE

Cushcraft introduces a popular dual band mag mount mobile for 2 meters/70 centimeters mobile operation. The antenna offers 3.7 dB on 2 meters and 6 dB on 70 centimeters and is only 36-1/2" tall. It comes complete with a 90 pound pull magnetic base, low-loss UltraLink Cable™ and a standard PL-259 connector. The printed circuitboard matching network assures stability and is ultrasonically welded in a weatherproof ABS housing for longer life.

Stacking Kits

617-SK	Stacking Harness & PD, two 617-6B's	A147-VPK	Vert.Pol. Kit for two A147-11
22-SK	Stacking Harness & PD, two 13B2's	A449-SK	Stacking Harness for two A449-6 or 11
26-VPK	Vert. Pol. Kit for two 13B2	A449-VPK	Vert. Pol. Kit for two A449-6 for 11
22N-SK	Stacking Harness & PD, two17B2's	A11-SK	Stacking Harness for two A144-11
220-SK	Stacking Harness & PD, Two 220B	A17-SK	Stacking Harness for two A144-7
A14-SK	Stacking Harness for two A147-4	A41-SK	Stacking Harness for two A430-11
A14-VPK	Vert. Pol. Kit for two A147-4	A535-SK	Stacking Harness for two A50-3/A50-5
A147-SK	Stacking Harness for two A147-11	A561-SK	Stacking Harness for two A50-6

Power Dividers for Boomers

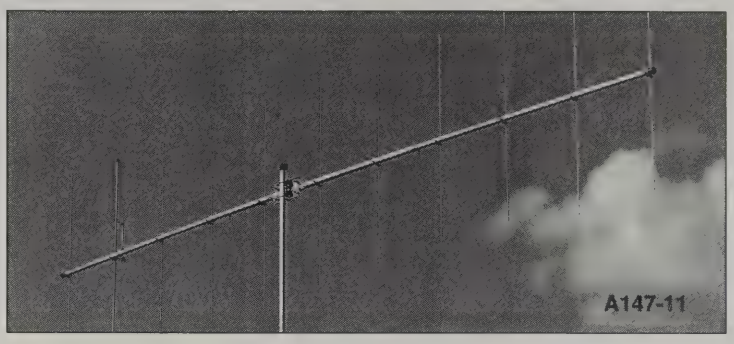
Our power dividers make it a snap to stack Cushcraft Boomers. They are available for these antennas:

PD-2	for two 13B2's	PD-4N	for four 17B2's
PD-2N	for two 17B2's	PD-222	for two 220B, 224WB or 225WB's
PD-4	for four 13B2's	PD-224	for four 220B, 224WB or 225WB's

FM Yagis

70 CM, 2 METERS

Two antennas have been keys to the growth of FM communication: our 11 element A147-11 and our 22 element A147-22 array. These are favorites because of their reasonable size and performance. Assembly is a snap, too!



MODEL	A147-11	A147-22	A449-6	A449-11
Frequency, MHz	145.5-148	145.5-148	440-450	440-450
No. Elements	11	22	6	11
Forward Gain, dBd	13.2	16.2	10.5	13.2
Front to Back Ratio, dB	20	20	18	20
Power, Watts PEP	800	800	350	350
Boom Length, ft	12	6.6 x 12	2.9	4.2
Longest Element, In	40	40	13	13
Turn Radius, ft	6	6.6	2.9	2.8
Max. Mast Size, In	1.5	1.5	2.0	1.75
Wind Load, ft²	1.2	2.82	0.3	0.4
Weight, lb	6	15	3	4

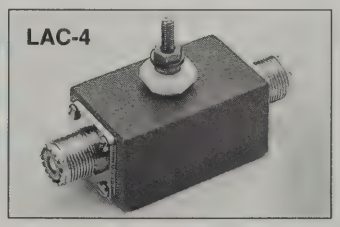
Lightning Arresters

FAST ACTING GAS DISCHARGE LIGHTNING ARRESTERS

Protect your valuable equipment from surges of up to 5,000 amperes with a Cushcraft constant impedance LAC4 arrester! The LAC4 has a replaceable gas discharge tube which clamps voltage surges to less than 50 volts in about 100 nanoseconds–much quicker than the voltage rise time of lightning.

You cannot afford to be without lightning protection. One of the models below is right for your shack.

LAC4	200 Watt with UHF SO-239 conn.
LAC4H	2 kw with UHF SO-239 conn.
LAC4N	200 Watt with N connectors
LAC4NH	2 kw with N connectors
LC2	200 Watt replacement cartridge
LC2KW	2 kw replacement cartridge



BLITZ BUG LIGHTNING ARRESTERS

Cushcraft also recommends this well-known series of arresters which are based on a patented three point static discharge design. The Blitz Bug has a sealed air chamber, constant static drain, and controlled voltage discharge.

The Blitz Bug is rated at 2 kw PEP to 500 MHz with negligible insertion loss.

LAC-1	with UHF PL-259 and SO-239 connectors
LAC-2	with UHF SO-239 connectors

The OUTBACKER®

All Band HF Mobile Antenna

Cover All Bands including WARC's with one neat built-to-last antenna! Broadbanded - perfect for your all-band mobile transceiver!

NO CHANGING COILS!

Six ft. long, rated at 300 watts PEP with a 500 watt option available. Also, four ft. Jr. model rated at 150 watts PEP.

The entire body of the antenna is constructed of fiberglass with pre-tuned copper helical windings. The exterior is covered with smooth, epoxy resin, and polyurethene for strength, durability, and protection. Band tap points are sockets made of rust free brass and clearly engraved for each band.

The **Wander Lead** is used for quick and easy manual band changing. No extra coils or whips to carry in the trunk! This is accomplished by plugging the lead into the lowest socket, then winding it counterclockwise to the band tap and plugging it in. A stainless steel retaining pin keeps the plug in place. Positioning the WanderLead and adjusting the stainless-steel tuning rod at the tip allows tuning for lowest SWR.

The bottom mounting ferrule is made of high-strength stainless steel and has ⅜" x 24 threads. Optional spring is constructed of heavy-duty zinc-plated spring steel, and rust free nickel-plated machined base. Base is two inches in diameter with an SO-239 connector.

OUTBACKER® MODELS

OB-8 • 300 watts PEP - 6 ft. long - 75, 40, 30, 20, 17, 15, 12, 10 meters .. **$259.00**

OB-8HP • Rated 500 watts PEP.....**$289.00**

OB-S8 (SPLIT) • Same as OB-8, but breaks down for easy storage; storage pouch included. **$289.00**

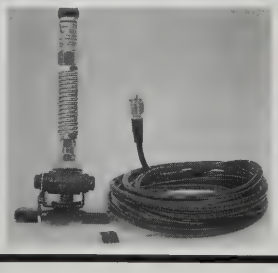
OB-JR8 • 150 watts PEP - 4 ft. long - 75, 40, 30, 20, 17, 15, 12, 10 meters .. **$229.00**

MARINER OB-M • 300 watts PEP - 6 ft. long - Covers Amateur Bands: 75, 40, 20, 17, 15, 10m. ITU bands: 4.1, 8.2, 12.4, 16.5 & 22.1MHz, plus 2.182MHz distress calling frequency. 3/8" x 24 mount **$389.00**

OB-SB • Spring and 1/2" hole base **$69.00**

New! OUTBACKER® "PERTH"

The new "PERTH" model looks similar to the regular Outbacker. A slightly different design – it is 7-1/2 ft. long, comprised of a 4 ft main shaft where the taps are located and a 3-1/2 ft. sleek stinger. A Higher Q design offers improved efficiency on 75/40m. It's low wind drag allows it to be easily mounted on trunk lip, hatch or bumper. The stinger retracts into the main shaft for stowage. Covers 75, 40, 30, 20, 17, 15,.12 and 10 meters. Rated at 150 watts PEP. With a suitable counterpoise works nicely for condo, apartment, portable, etc operation. **$269.00**



DIAMOND
K400K-3/8M
Mobile Trunk-lip Mount with coax for Outbacker shown with an optional spring, not included
$69.95

THE SMILEY ANTENNA CO.

Hand Tuned Antennas for your Hand Held Radios

A B C D E F G H I J K L

Each Smiley handheld antenna is individually hand tuned to resonance at band center under normal operating conditions. (No ground plane – No radials). Manufactured from the finest heat-treated copper plated spring steel coils. Cold rubber compound is used for coil insulation and a neoprene heat-shrink coating for strength and endurance. Available with connectors for most handhelds.

When ordering specify connector (BNC, etc.) or for which handheld.

THIN STICK • 1/4 wave telescoping **dual band** antenna for 144 and 220MHz bands ..... **(TS) $16.95**

SUPER STICK II (A) • 2 meter, 5/8-wave, flexible base loaded telescoping antenna. 6-9db gain fully extended (54"); usable fully collapsed, or one section 1/4 wave. Length: 54" extended, 10" collapsed ..... **(SS-II) $19.95**

SUPER STICK II COMBO • As above but includes a 2 meter Stubby Duck antenna (D) ..... **(SS-II/COMBO) $26.95**

5/8 SLIM DUCK (B) • 2-meter, 5/8-wave, 7db gain, flexible base loaded antenna. 12" long ..... **(5/8 SLD-2) $17.95**

5/8 SLIM DUCK COMBO • As above, but includes a 2 meter Stubby Duck antenna (D) .....**(5/8 SLD-2 COMBO) $24.95**

REGULAR DUCK (C) • For 2 meters. Tuned Ducks show a 3db gain over other Rubber Ducks because they are impedance matched for hand-helds. ..... **(RD-2) $14.95**

STUBBY DUCK (D) • Tuned, efficient, for 2M **(RDS-2) $14.95**

SUPER STICK III • 220MHz 5/8-wave, flexible base loaded telescoping antenna. 6-9db gain fully extended; also usable fully collapsed, or a one section 1/4 wave. Length: 36" extended, 8¾" collapsed ..... **(SS-III) $19.95**

SUPER STICK III COMBO • As above but includes a 220MHz Stubby Duck antenna (G) ..... **(SS-III COMBO) $26.95**

5/8 SLIM DUCK (E) • 220MHz, 7db gain, flexible base loaded antenna. Length: 9" ..... **(5/8 SLD-220) $17.95**

5/8 SLIM DUCK COMBO • As above, but includes a 220MHz Stubby Duck (G) ..... **(5/8 SLD-220 COMBO) $24.95**

REGULAR DUCK (F) • Tuned for 220MHz .... **(RD-220) $14.95**

STUBBY DUCK (G) • Tuned for 220MHz .... **(RDS-220) $14.95**

SUPER STICK IV (H) • 440MHz 5/8-wave, flexible base loaded telescoping antenna. 6-9db gain extended; usable collapsed. 18" extended, 5¾" collapsed..... **(SS-IV) $19.95**

SUPER STICK IV COMBO • As above but includes a 440MHz Stubby Duck (K) ..... **(SS-IV/COMBO) $26.95**

SLIMLINE (I) • 440MHz, 1/4λ flexible ant .. **(SL-440) $12.95**

5/8 SLIM DUCK (J) • 440MHz, 7db gain, flexible base loaded antenna. Length: 5" ..... **(5/8 SLD-440) $17.95**

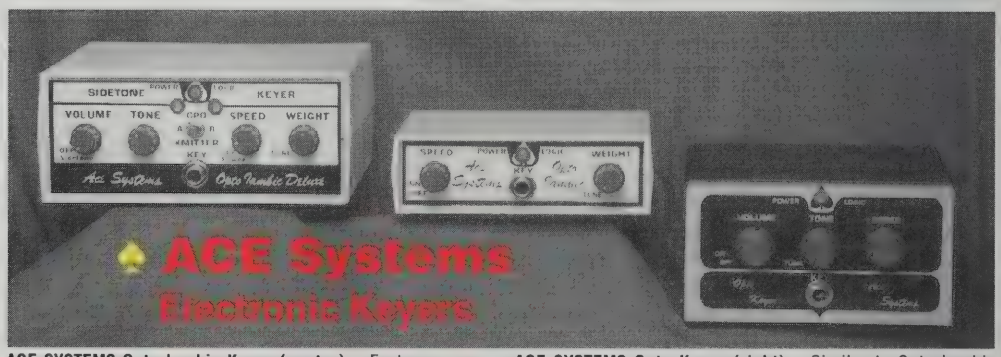
5/8 SLIM DUCK COMBO • As above, but includes a 440MHz Stubby Duck (K) ..... **(5/8 SLD-440 COMBO) ($24.95**

STUBBY DUCK (K) • Tuned for 440MHz .... **(RDS-440) $14.95**

MINI DUCK (L) • Tuned for 440MHz ..... **(RDMD-440) $14.95**

TAQ • 1/4-wave whip, specify 2M, 220 or 440MHz **$10.95**

270A • Combination 2m/440 gain telescoping whip .. **$19.95**



ACE SYSTEMS Opto Iambic Keyer (center) • Features seven CMOS devices for high noise immunity and low power consumption. Built-in RFI suppression and safe optoisolated output. Continuously adjustable SPEED and WEIGHT controls, TUNE and ON/OFF switches. Positive (+) keying up to 30V DC. Power/Logic LED for constant monitoring power and logic status. Requires 9V battery or any DC source from 5 to 15V DC. Reverse polarity protected. 5"w x 5½"d x 1½"h..... **$59.95**

ACE SYSTEMS Opto Deluxe Keyer (left) • Features similar to Opto Iambic. A full function iambic keyer with defeatable sidetone with 2" speaker and volume control. Dual rig switching feature. **Xmitter A:** Positive (+) keyed output 30V DC Max. **Xmitter B:** Grid Block (-) keyed output 80V DC Max. or Positive keyed output 30V DC maximum. Requires external DC up to 15 volts. 6⅞"w x 6⅜"d x 2½"h..... **$84.95**

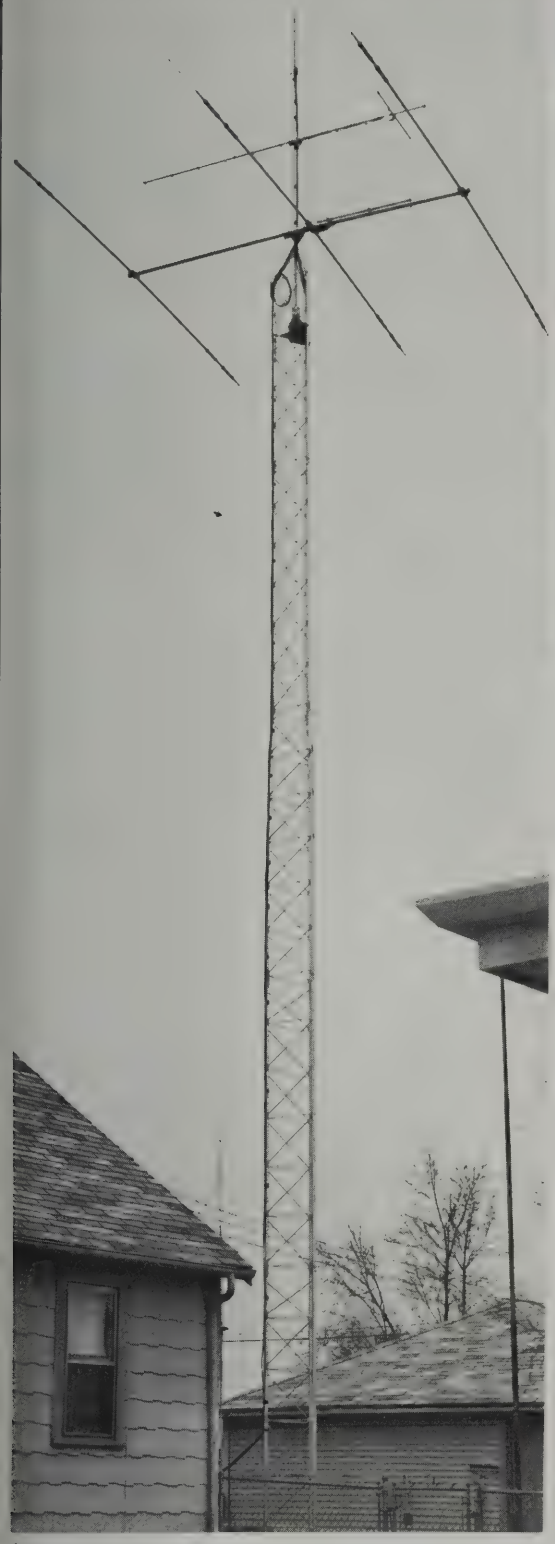
ACE SYSTEMS Opto Keyer (right) • Similar to Opto Iambic except **not** iambic. Self-completing dots and dashes. Built-in CW sidetone with a 2¼" speaker, volume and tone controls; can be used as a code practice oscillator. Battery or DC powered up to 15V. 5¾"w x 5⅜"d x 3¼"h **$39.95**

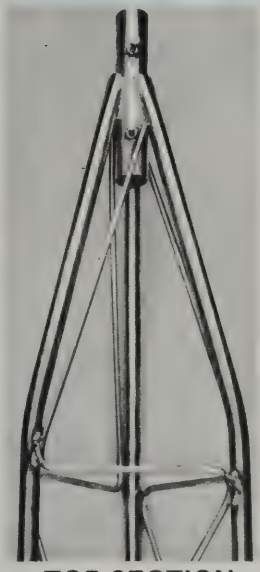
QSL CARD HOLDER displays 20 cards . . .

1.5 mil clear plastic, 12" wide x 42" long with mounting strip for hanging. up. 2 rows of 10 4" x 6" pockets with center rear slit for card insertion.

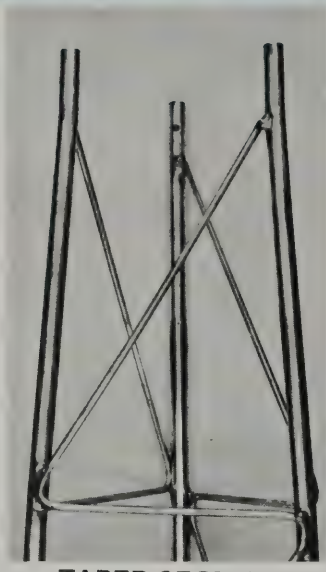
Pack of 3 (60 card display) • $9.95

UNIVERSAL TOWERS

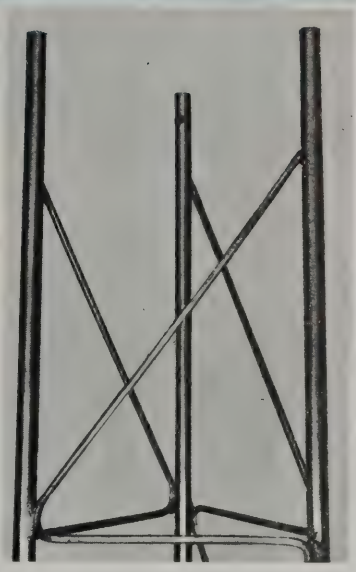




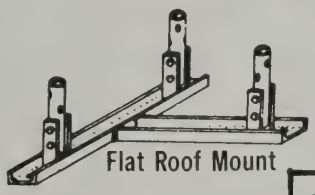
TOP SECTION



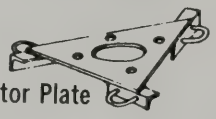
TAPER SECTION



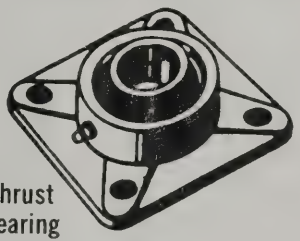
STRAIGHT SECTION



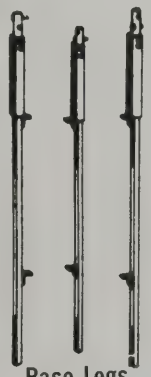
Flat Roof Mount



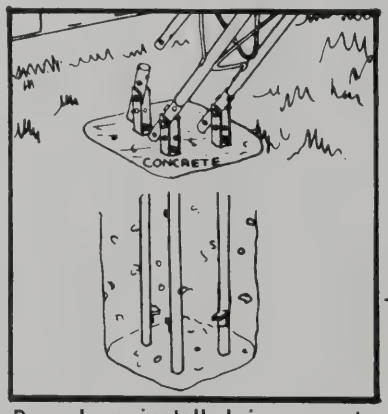
Rotor Plate



Thrust Bearing



Base Legs



Base Legs installed in concrete showing Hinge-Over feature.

Top Section with Thrust Bearing Plate

Here is a 50 ft. UNIVERSAL Self-Supporting Aluminum Tower installed at the QTH of Ted Willett W9NHE. This system made a Big difference - he really gets out!

Before you buy a tower consider the advantages of Aluminum - it's Strong, Lightweight, Rust Free and easy to assemble and erect.

UNIVERSAL offers 10 ft. sections or complete towers ranging from 30 to 100 ft. with a choice of wind load ratings and accessories to meet your specific needs.

A listing and description of UNIVERSAL TOWERS is shown in the Price List. For more info fill out and mail the Coupon along with $1.00 to receive their latest Catalog.

To: **AMATEUR ELECTRONIC SUPPLY®**
5710 W. Good Hope Road
Milwaukee, WI 53223

Enclosed is $1.00 • Please send me the latest UNIVERSAL TOWERS Catalog.

Name _____

Call _____

Address _____

City _____

State _____

Zip Code _____

STANDARD®

C558A TWIN BAND 2 METER / 70 CM HANDHELD THE WORLD'S "STANDARD" OF EXCELLENCE INTERCHANGEABLE 40-200 CHANNEL MEMORY CHIP 23 MENU AIDS FOR EASY PROGRAMMING

- MAKE NO MISTAKE THIS IS THE MOST ADVANCED HAND-HELD IN THE HAM MARKET
- REPEATER CROSSBAND MODE
- BUILT IN CTCSS ENCODE/DECODE
- WIDE BAND RECEIVE
- INTERCHANGEABLE BATTERIES AND ACCESSORIES WITH THE C228A, C528A AND C628A
- FULL DUPLEX OPERATION
- VERSATILE SCANNING MODES ALLOWS YOU TO LOCATE THE ACTION QUICKLY
- TRUE TWIN BAND HANDHELD WITH SEPARATE VOLUME AND SQUELCH CONTROLS
- RECEIVE SENSITIVITY IS UNBEATABLE, 0.158 uV FOR 12 dB SINAD
- LOWEST POWER REQUIREMENT FOR MAXIMUM BATTERY LIFE
- DIRECT FREQUENCY INPUT FROM THE KEY-BOARD

For more information on this and other STANDARD products, contact your nearest dealer or call STANDARD Amateur Radio products at (312) 763-0081.

Specifications, price and features are subject to change without obligation or notice. All products carry a ONE YEAR limited warranty.

STANDARD

STANDARD Amateur Radio Products, Inc.
P.O. Box 48480
Niles, Illinois 60648

STANDARD®

New C5608DA True Twin Band Mobile Transceiver
Control the C5608DA completely from its remote microphone

40 MEMORY CHANNELS

BROAD RX FREQUENCY COVERAGE: VHF RX 115 MHz to 180 MHz (with less than 0.158uV sensitivity for 12DB SINAD between 130 and 165 MHz typical, spec guaranteed in ham bands only). Plus incredible UHF RX capability of 328 MHz to 500 MHz! Supplied TX is Amateur Bands only, but can be modified for MARS & CAP, proof of participation is required.

OTHER KEY FEATURES:
- Unbeatable 0.158uV sensitivity.
- 50 Watts out on 2M, 40 on 70cm, 10W Mid and 3W Lo.
- Eight kinds of scan, including scan for correct CTCSS.
- Industry standard DTMF paging and code squelch.
- Repeater mode plus Full Duplex Cross Band Op.
- Impressive display and logical operation.
- Separate Volume and Squelch controls for each band.
- Automatic mute gives priority to one band.
- Built in CTCSS Encode/Decode.
- Much more...

For more information on this and other STANDARD products, contact your nearest STANDARD dealer. Specifications, price and features are subject to change without obligation or notice.

Standard Amateur Radio Products, Inc.
P.O. Box 48480
Niles, Illinois 60648
(312) 763-0081

STANDARD®

STANDARD®

WORLD'S SMALLEST FULL-KEYBOARD HANDHELD

•

REPLACEABLE MEMORY CHIP
40 to 200 channels

•

WIDE BAND RECEIVE COVERAGE

Let STANDARD take you to the TOP. C168A for 2 Meter and C468A for 70 cm operation. 5 watts output from 12 volts. 7 types of SCAN (pause, busy and hold). CTCSS encode/decode included. Rubberized non-slip knobs and keypad. Rugged Aluminum Back. Doubles as a powerful heat sink and securely mounts belt clip. Acoustically Balanced Speaker, delivers full-fidelity audio. Direct Keyboard Entry. Four Batteries Available, plus battery case (5 AA) as options.

For more information on this and other STANDARD products, contact your nearest dealer or call STANDARD Amateur Radio Products at (312) 763-0081.

Specifications, price and features are subject to change without obligation or notice. All products carry a ONE YEAR limited warranty.

STANDARD Amateur Radio Products, Inc.
P.O. Box 48480
Niles, Illinois 60648

STANDARD.

STANDARD®

C228A :

"Everyone loved it"

.....QST – June 1991

(They even used the C228A as a reference to compare to other dual-banders!!!)

➤ Lowest power requirement for maximum battery life.

True "TWIN" Band (not just dual band) in a hand held transceiver.

➤ Receiver sensitivity is an unbeatable 0.158 uV for 12 dB SINAD! Unbeatable out-of-band sensitivity and frequency coverage.

➤ 40 Memories + 2 call memories with up to 20 offsets and CTCSS tones! Large, easy to read twin display, one side for each band. Enter a new frequency directly via the keyboard, or with the rotary frequency selector. The rotary selector even doubles as a memory channel selector in the memory mode.

➤ Scan the first 10 memories or last 10, scan all 20 memories, scan selected memory channels, scan a 1 MHz segment of the band, all except 1 MHz, or scan the entire band. Even scan a single frequency for proper PL tone! Double the number of scanning modes, because in any mode you can select pause scan or busy scan. Pause scan stops on an active channel, but resumes after a few seconds so you hear everything that's going on. Busy scan stops on an active channel and holds until the frequency goes clear. Dual watch which lets you monitor two frequencies at the same time.

➤ DTMF encoded Code Squelch and Paging modes allow selective calling or paging to call a friend at a busy hamfest or page through a repeater. DTMF tones are automatically sent at the beginning of each transmission which unlock only the desired compatible receiver.

➤ Clone mode allows you to quickly program a friend's new STANDARD HT from yours. All memory contents including frequencies, offsets and CTCSS tones are copied over the air from one HT to the other in less than one minute!

CTCSS (encode-decode) INCLUDED!

The first & only H/T with **2 Meters AND 220 MHz!**

2 Meters & 440MHz **NEW!**

700mAh NiCad!

➤ Extremely wide (6V to 16V DC) power requirement allows you to operate these HT's directly from your automobile's 12V system without regulation. Get full 5 watt output when operated from 12VDC or more.

➤ Full 16 key DTMF pad and VHF/UHF Full-Duplex operation allows full duplex telephone calls through equipped repeaters.

➤ Each HT includes 700 mAh 7.2 volt NiCad battery pack and charger. High efficiency base loaded antenna out performs other antennas and works great out-of-band as well.

➤ C228A also operates in cross band half-duplex mode (if desired) and can store one DTMF memory to access your favorite autopatch number or control code.

For more information on this and other STANDARD products, contact your nearest dealer or call STANDARD Amateur Radio Products at (312) 763-0081.

Specifications, price and features are subject to change without obligation or notice. All products carry a ONE YEAR limited warranty.

STANDARD Amateur Radio Products, Inc.
P.O. Box 48480
Niles, Illinois 60648

STANDARD

GAP Antenna Products

All out Efficiency & Performance • GAP gets it all out • Antennas for Limited Space, NO TRAPS

GAP ANTENNA PRODUCTS™

Center Launch Technology

NO!
Traps, Coils Transformers, Baluns, Resistors or Base Insulators.

All Pretuned!

For 50 years . . . the vertical has not changed – a vertical wire, fed at the base surrounded by any number of radial wires. To operate multiband, traps were placed at appropriate points to shorten the antenna to a 1/4-wave on various bands. Big signals on the band did not come from these verticals and DX contacts, with the vertical's well known low angle radiation, did not happen consistently. The vertical is used by those with minimal space, finances or with local restrictions. If a new Amateur asked what to put up for an Antenna he was told, "put up a dipole". *Why?* Because of low radiation resistance and high earth losses (even with an extensive radial system), a conventional vertical is the *most inefficient* antenna available for amateur use, and the trap version is even worse.

Did you know? . . . a 26 ft. vertical on 80 meters should be 66 ft. high. The "missing" 40 ft. is replaced by coils (traps). The short antenna has a radiation resistance of 4Ω. It's a "virtual" resistor which when power is applied to it, radiates R.F. That, however, isn't the only resistor in the antenna system, there are more! The significant resistor is called earth loss which results from radials and the ground. If three radials are used the earth loss created is more than 30Ω. We now have a antenna with 4Ω (that radiates) and 30Ω (that warms the ground) for a total of 34Ω. *But only 4Ω radiates!* If 100 watts is fed to this antenna *only 12 watts actually radiates.* Insert lossey traps, e.g. 2Ω of loss, the power drops from 12 watts to 11 watts radiated. Traps don't matter . . the huge earth loss matters.

Put out a lot of radials? . . . If you found 4000 ft. of wire (for 60 radials) and the room to bury them, the earth loss would drop from 30 to 4Ω. All that effort and the radiated power is still only 50 watts. *Half is still warming the ground!* Worse than that, you now destroy the multiband operation. A multiband vertical must have earth loss to work! That's why a multiband vertical mounted on your roof won't work all the bands. It was obvious that a new vertical design was needed with design objectives to increase the radiation resistance and decrease or eliminate the earth loss.

Enter the GAP antenna! . . . a radically different vertical. The GAP design elevates the feed point to increase the radiation resistance closer to 50Ω, for a perfect match to the feedline and virtually eliminates earth losses. You don't find earth loss with dipoles, they are elevated. Technically earth loss results from the capacitance of the antenna to ground - from above the feed point. The conventional vertical's feed point at ground level vs. the GAP feed at 16 ft. (Challenger) reduces the loss from 30Ω plus to approximately 5Ω. The GAP antenna, with an antenna resistance of 50Ω and an earth loss of 5Ω, is no longer a very lossey antenna - It's efficiency is approximately 90%. When compared to the 12% efficiency of conventional verticals, the improvement is a dramatic **600%**

NO TRAPS in the GAP! . . . The elevated feed and the unique tuner rods enable the GAP to operate as a vertical dipole even though it is grounded! Eliminating the traps is important. Without them an antenna is more reliable, has increased bandwidth, is frequency stable with no shifts in frequency and most important - you don't have to keep tuning and retuning.

Voyager DX-IV

• **BANDS:** (4) - 160, 80, 40 and 20 meters • **BANDWIDTH:** Covers total Band on 80, 40 & 20 meters, 90 kHz on 160 meters • **POWER RATING:** Handles the Legal Limit • **IMPEDANCE:** 50Ω (coax) • **HEIGHT:** 45 feet tall • **CONSTRUCTION:** 2" diameter 6063-T832 Aluminum, and all Stainless Hdwe • **MOUNT:** Aluminum pivot (supplied) guy brackets (supplied) • **WIND AREA:** 7 sq. ft., requires 2 sets of guy ropes (needs 350 ft. of rope) • **AREA REQUIRED** 25' x 25' for guys & radials • **RADIALS:** 3 @ 57 ft. long (fits in 25 ft. x 25 ft. area.)

Challenger DX-VIII

• **BANDS:** 80, 40, 20, 15, 12, 10, 6 and 2meters • **BANDWIDTH:** Covers the total band on 40, 20, 15 and 12 meters, 130 kHz on 80 meters and 1 MHz on 10 meters. • **POWER RATING:** Handles the Legal Limit • **IMPEDANCE:** 50Ω (coax) • **HEIGHT:** 31.5 ft. tall • **WT:** 18 lbs • **CONSTRUCTION:** Aluminum tubing 6063-T832, and high temperature coaxial cable, stainless steel hardware, ground mount (PL-259 and nut driver included) • **RADIALS:** 3 @ 25 ft. long (fits in 10 ft. x 12 ft. area) • **TRAPS:** None • **MOUNT:** Ground, roof-or tower

NEW! Eagle DX-VI

All out efficiency, all out performance - No tuning coils, resistors ground plane or earth loss. Total bandwidth is under 2:1 on all bands! Full bandwidth on 40 meters, and 10 meters can be further custom tuned for your favorite part of the band. • **BANDS:** 40, 20, 17, 15, 12, 10 meters • **HEIGHT**: 21.5 ft tall • **WEIGHT:** 11 lbs • **MOUNTING:** Comes with its own mount for pole, mast, tower, or ground mount, PL-259 and nut driver • **RADIALS:** Three rigid 8 ft. counterpoises are supplied for the base

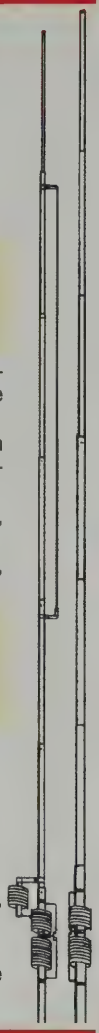
GAP Antennas are not available at the AES Wickliffe, Ohio Store.

Voyager DX-IV	Challenger DX-VIII	Eagle DX-VI
4 Bands	8 Bands	6 Bands
$389.95	$249.95	$259.95

For Antenna Performance • The Answer is GAP Technology

BUTTERNUT

HF Antennas



The HF-5B "Butterfly"™
COMPACT BEAM
for 10-12-15-17-20 meters

- Unique design reduces size but not performance. • No lossy traps – the entire element radiates.
- **3dB** gain on 20 meters, up to **5dB** on 10 and 15 meters – rotary dipole performance on 17 meters.
- Boom length: 6 ft., wingspan: 12½ ft., handles 1.2 KW final input.
- 2.9 sq. ft. wind area, weighs 17 lbs, turns with TV rotor with up to 1½" mast.

VERTICALS

Uses Highest-Q tuning circuits (no lossy traps) to out-perform other multi-band designs of comparable size.

Model HF-6VX (left) • $169.95
- Automatic bandswitching on 80, 40, 30, 20, 15 and 10 meters.
- Add-on kits for 160, 17 and 12 meters
- 26 ft. tall, self-supporting, legal limit.

Model HF-2V (right) • $159.95
- Automatic 80/40 meter bandswitching, add-on units for 160 or 30 meters.
- Low Angle of radiation – great for DX!
- 32 ft. tall, self supporting, handles the legal power limit.

GAMBER JOHNSON

SUPER SLIDE Radio mount system

Model SS-100 • Convenient! Radio slides in and out of mount instantly – without having to attach or remove cables. Power, Ground, Antenna, and Speaker leads connect and disconnect automatically. RF components are designed for a low SWR up to 500MHz. Adapts to most radios; bracket adjusts to case and can be attached above or below radio. **$44.95**

SS-101 Extra base available for multiple vehicle use **$29.75**

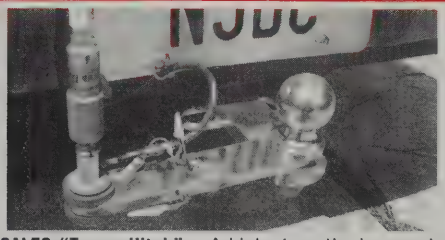
AMERITRON

Remote Coaxial Switches

AMERITRON RCS-4 (left) • Select up to four different HF antennas while using just one coaxial feed line, and **no** control cable. The weatherproof switch box locates on a tower, mast or other remote location. The control box at your operating position switches antennas via control voltages directly through the coax. Rated for 1.8-30MHz and legal power limit .. **$124.95**

AMERITRON RCS-8V (right) • Independently or simultaneously selects up to five different antennas using just one coax feedline and single 8-wire control cable. Internal wiring allows user to ground or float unused ports as required. Rated at 5KW below 30MHz and 1KW up to 150MHz **$139.95**

DC SALES



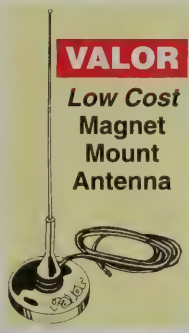
DC SALES "Tenna Hitch" • A high strength chrome plated steel bracket with an insulated 3/8" x 24 stud antenna mount. Installs under the ball of a Class-1 or Class-2 trailer hitch ball. Handles the largest antennas and does not interfere with trailer towing. No holes to drill, all hardware supplied ... **$29.95**

HY-GAIN (Telex)

2400-155 "Contester" • Boom/mic headset with a noise canceling dynamic mic. designed for the voice range (100-8000Hz) that provides maximum QSO intelligibility. The boom rotates and can be worn on either side and it automatically shuts off mic. when placed upright. Wide range dynamic headphones have comfortable foam cushions with washable socks..... **$79.95**

VALOR

Low Cost Magnet Mount Antenna



Model VAA-002 • A Low cost magnetic mount 1/4λ antenna for 2-meters, but the stainless steel whip section can be easily trimmed for operation up to 450MHz. The strong magnet mount with "no scratch" rubber boot mounts almost anywhere on vehicle. Rated for 200W and comes ready to go with 12 ft. of RG-58-type coaxial cable with a standard **PL-259** connector..... **$19.95**

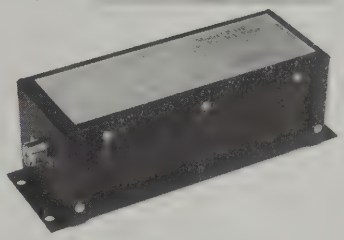
Model VAA-002BN • same as above, except fitted with a **BNC** type connector for most handhelds..... **$22.95**

OAK BAY TECNOLOGIES

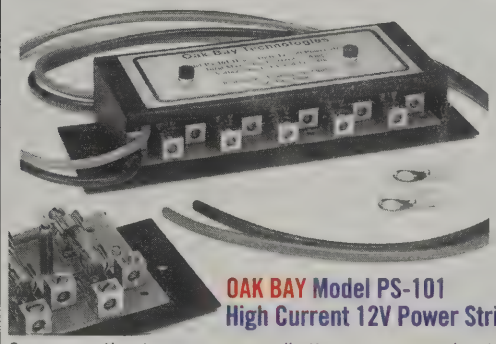
OAK BAY AM-101B Rubber Duck Window Mount

Improves mobile HT operation by getting RF out of the car. Great for emergencies, rental cars, etc. Custom stainless steel bracket slips on car window and your rubber duck attaches to the BNC mount. Comes with 6 ft. of RG-174U coax with BNC connector. 50Ω, handles 15W, dual/twin band compatible..... **$24.95**

OAK BAY Model LP-11P Commercial Grade Low Pass Filter



Installs in transmission line between HF Transmitter and power amplifier or tuner. Eliminates TVI by filtering out transmitter generated harmonics that could fall within TV bands. Eleven pole Chebishev design covers 1.8 thru 30MHz with <.5dB insertion loss, an upper cutoff frequecy of 41MHz and 150dB of ultimate attenuation. 50Ω, max.power 1KW.... **$69.95**



OAK BAY Model PS-101 High Current 12V Power Strip

One connection to power source (battery, power supply, etc.) provides 5 outputs – two fused at 20A and three fused at 30A. Rugged screw/clamp connections. Rated at 50A total current. Comes with 5 ft. of #8 gauge wire, terminals and fuses. **$79.95**

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MODEL SG-2000 HF SSB RADIOTELEPHONE

Most hams would never subject our SG-2000 all frequency HF transceiver to the kind of extreme conditions we designed it for. You'd likely be satisfied having 150 watts output, 644 ITU channels, 100 user defined (ham) frequencies in memory plus a direct entry VFO with 10 Hz stability, full frequency coverage and a superb 2:1 IF shape factor. Features such as FCC Type Approval, made with pride in America, direct Weatherfax support, up to 8 control heads and full performance from -22F to +140F might seem a bit extreme. But if you ever chewed the rag on 20 meters in a Force 9 Arctic gale, you'd appreciate that there's a difference between extreme performance and performance in the extremes.

EXTREME PERFORMANCE!

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World's finest HF SSB radiotelephones

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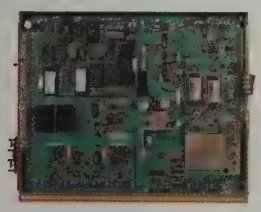
MODEL SG-2000

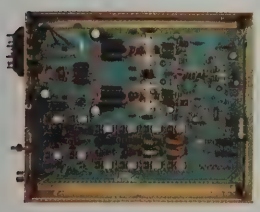
HF SINGLE SIDEBAND GLOBAL RADIOTELEPHONE
FULL FREQUENCY COMMUNICATIONS FOR VOICE AND DATA

Make contact anywhere with SGC's new power-packed Model SG-2000 HF Single Sideband transceiver. Talk anywhere in the world, receive and send time sensitive documents, decode UPI transmissions, get the latest weather report or listen to shortwave broadcasts from around the world. Engineered for simple and efficient operation, the SG-2000 features an alarm generator, upper/lower sideband, true amplitude modulated (AM) receiver and channel scan as standard features. Exceptional features include 644 factory programmed ITU voice and data frequencies plus 100 field programmable channels. Scan all ITU channels and up to 100 memory channels in adjustable scan speeds and rates. An extra large liquid crystal, wide angle display with adjustable backlighting provides easy viewing day or night. The color coded and illuminated keypad has 130 annunciators and is easy to program and operate. The technical superiority and quality workmanship is evident in every SGC product, from the clean design of the PC boards to the sophisticated housing and user friendly front panel.



Optionally, the SG-2000 can be fully computer controlled by any standard RS232 protocol connector to allow easy flow and management of data communications on RTTY, ARQ (SITOR), FEC, PACKET, and telegraphy modes. Fast RX/TX switching time ensures easy and secure data transmissions.

The front panel of the SG-2000 can also act as the remote head terminal, and up to 8 full function remote heads can be utilized. The remote heads can be mounted flush with the bulkhead so they do not intrude on people space and the high impact, abrasion and water resistant housing will stand up well in the toughest environments. The SG-2000 front panel remote is the ultimate in compact size.



The SG-2000 has been engineered with a practical approach to use. The optional universal 5-way head mount orients the control head in any direction, for easy viewing and operation.

SGC was established in 1971 and has become well-known for designing and manufacturing specialized HF equipment and system designs. SGC regularly supplies large system contracts to armed forces and government agencies throughout the world, and is a consistent supplier to many petroleum companies, the United Nations, the World Meteorological Organization and Boeing.

MADE IN USA

CALL FOR SGC'S PRODUCT AND ACCESSORY CATALOG

GENERAL DESCRIPTION	
Model	SG-2000
Channels	100 channels field programmable, 644 channels factory programmed ITU voice and data
Scan channels	up to 100 channels programmable in 10 groups
Scan frequency	in 0.1, 1, 3 KHz and 5 KHz steps
Scan dwell time	adjustable from .1 to 40 seconds,
Transmitter Frequency Range	1.8 to 30 MHz
Receiver Frequency Range	500 KHz to 30 MHz
Frequency Stability	±10 Hz
Operating Modes	A3A, A3H,A3J and CW in LSB and USB, True AM in receive mode & data.
Protection	Fully protected against damage due to battery reversal or antenna fault.
Display	LCD for frequency or channel with annunciators of all functions and modes, and time or date
Metering	S-meter in RX forward power or VSWR in TX
Keypad	21 keys illuminated
Alarm generator	Programmed for standard operation
Operating temperature	-45° to 85° C
Full specification temperature	-30° to 60° C
Approvals	FCC approved 80,87,90. DOC/CEPT pend.
POWER REQUIREMENT	
Nominal	13.6 VDC; 0.8A RX, 16A TX (voice)
Full Specification Compliance	11.5 VDC
Full Operation	10.5 to 18.0 VDC

RECEIVER	
Sensitivity	.5µV produces .5W of audio with 10dB SNR
Intermodulation:	+86dB (CCIR specification)
Blocking	+100dB (CCIR specification)
Transmodulation	+ 95dB (CCIR specification)
Image and IF rejection	+90dB
Audio Output	4W with less than 10% distortion
TRANSMITTER	
Power Output in 50 ohms	150 watts* PEP
Power Output reduction	To less than 50 watts PEP
Maximum Stress Power Output	225 watts CW***
Audio Response	Flat within 6dB between 350 & 2400 Hz
DATA COMMUNICATIONS	
Ready and compatible	RTTY, ARQ, FEC, PACKET and telegraphy
RX/TX switching time	10mS nominal
COMPUTER CONTROL	
Input/Output drive	RS 232 (optional)
Access and recall	Of all transceiver functions (optional)
CONTROL OF TRANSCEIVER SYSTEM	
Local	One controller mounted to the radio
Remote	Up to 50 meters away from the radio (10 wires)
Intercom	On all 8 remotes
DIMENSIONS AND WEIGHT	
Overall Dimensions	11.7 (H) x 25.4 (W) x 38 (L) cm 4.7 (H) x 10 (W) x 15 (L) inches
Weight	5.4 kg (12 lbs)

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SGC reserves the right to change specifications without notice

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SGC

MODEL SG-23

ANY RIG — ANY ANTENNA AUTOMATICALLY

SMARTUNER™

Let's get frank about HF antennas. Most hams try to put resonant antennas up for every band. For those with the room, great! But for the rest of us, limited to perhaps a single long wire or some other compromise antenna, the SGC SMARTUNER is the ideal solution. It's onboard computer selects exactly the right inductance and capacitance from more than one half million possible combinations. Then it remembers the setting so your rig will retune in 10 milliseconds. It's waterproof, too, built to exacting commercial and para-military standards. So, even if your antenna is a compromise, your signal doesn't have to be.

SGC

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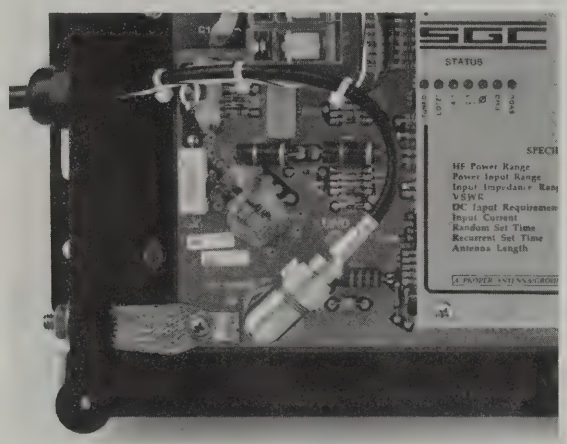
MODEL SG-230

SPECIFICATIONS - SG-230	
HF Frequency Range:	1.8 to 30.0 MHz
Power Input Range:	10 to 150 watts (PEP)
Input Impedance Range:	45 to 55 ohms
VSWR:	Typical: less than 2:1
DC Input Requirement:	13.8 VDC typical (optional 24 VDC)
DC Operating Range:	10 to 15 VDC (optional: 24VDC)
Input Current:	Average: .9 amps
Random set time:	Typical: less than 2 seconds
Recurrent set time:	Typical: less than 10 milliseconds
Non volatile memory addresses	500
Antenna Length:	8 to 80 ft. 3.3-30 MHz 23 to 80 ft. 1.8-30 MHz
Installation:	Any position
Operating Temperature:	-35° to +70°C
Environmental:	Waterproof at immersion half meter, half hour
Size overall:	16x 12 x 3 inches
Weight:	8 pounds (3.5 kilos)
Case Construction:	Plastic ABS (optional: shockmount tray)
Control Cable:	SGC special cable, 9 ft. coaxial and two power wire input (replaceable by any standard cable)

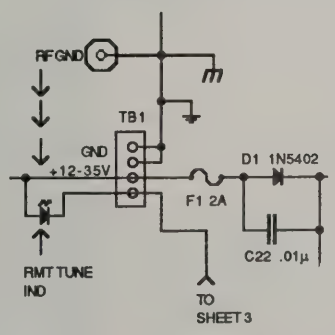
A seven "LED" status "B.I.T.E*" indicator, displays input power, forward power, phase, two VSWR levels, low impedance and tuned conditions.* (B.I.T.E Built In Test Equipment)

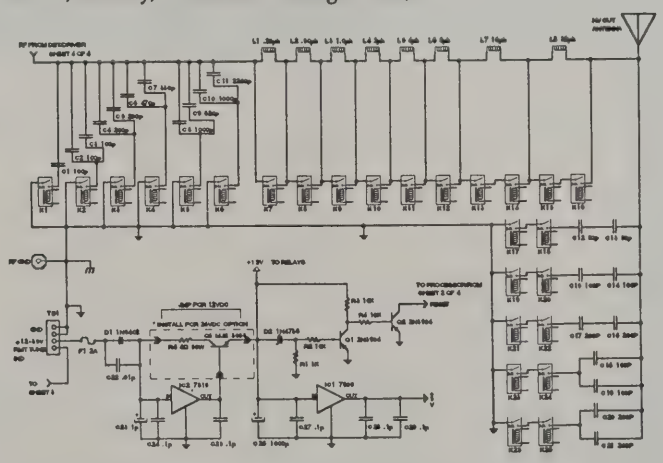


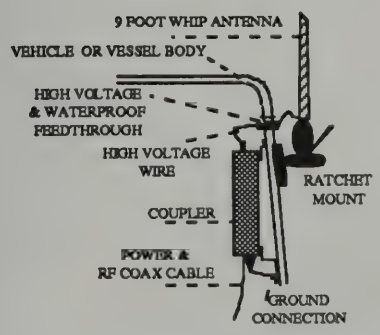
The *Smartuner* high technology coupler will "intelligently" tune any length antenna from 8 to 80 feet in the HF band, from 1.8 to 30 MHz from 10 watts up to 150 watts PEP input power. The SG-230 antenna coupler is available with several options, such as shock mount for military applications and 24 VDC operation. No preliminary tuning or adjustment is required and the unit will operate with any HF transceiver within its specifications. The SG-230 coupler switches 64 input and 32 output capacitance combinations plus 256 inductance combinations in a π "pi" network resulting in over a half-million different ways to ensure a perfect match for the transceiver. Even more important, it *remembers the frequency and the tuning values.* On future transmissions of the same frequency, the *Smartuner* re-selects these values in less than 10 ms.

The only necessary connections to the SG-230 Antenna Coupler are 12VDC power supply (24VDC optional) and RF coaxial cables. In addition, a tuned LED indicator may be connected externally to the "RMT TNE" line for visual "Coupler Tuned" recognition. LED must be connected in series with 4.7KΩ 1 Watt resistor if the input power source is 24VDC.

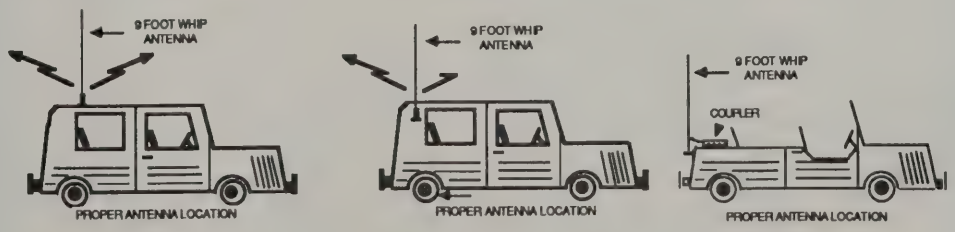
RF π "pi"network with over half million microprocessor selected combinations.
(Not shown are the CPU, Memory, Drivers and Sensing circuits)







Vehicular installation with the high performance SG-303 8 foot whip antenna.



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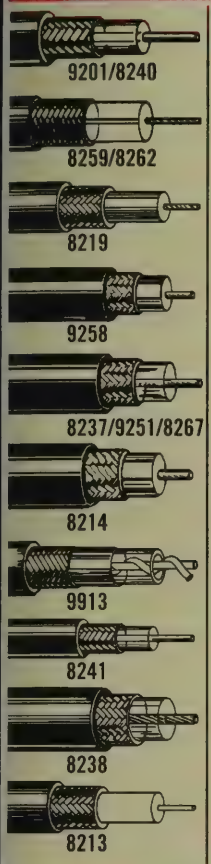
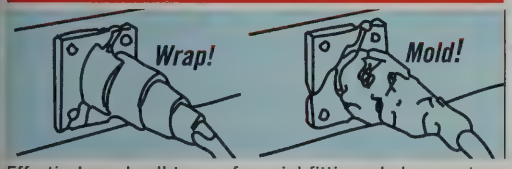


Belden number	RG-type	Dia. (in.)	Center conductor	Insulation type	Shield coverage	Jacket type	Imp. (Ω)	Vel. factor	Loss/100' 100 MHz
9201	58/U	.193	#20 solid copper	Solid polyethylene	78% bare copper	PVC	53	66%	4.5 dB
8240	58/U	.193	#20 stranded tinned cop.	Solid polyethylene	95% tinned copper	PVC	53.5	66%	4.5 dB
8259	58A/U	.193	#20 stranded tinned cop.	Solid polyethylene	96% tinned copper	PVC	50	66%	4.9 dB
8219	58C/U	.193	#20 stranded tinned cop.	Cellular polyethylene	96% tinned copper	PVC	50	78%	4.5 dB
8262	58/CU	.193	#20 stranded tinned cop.	Solid polyethylene	95% tinned copper	Non-contam. PVC	50	66%	4.9 dB
9258	8/X	.242	#16 stranded copper	Cellular polyethylene	95% bare copper	PVC	50	78%	3.7 dB
8237	8/U	.405	#13 stranded copper	Solid polyethylene	97% bare copper	PVC	52	66%	2.2 dB
8214	8/U	.405	#11 stranded copper	Cellular polyethylene	97% bare copper	PVC	50	78%	1.8 dB
9913	8/U	.405	#9½ solid copper	Semi-solid polyethylene	100% foil + 88% braid	PVC	50	84%	1.4 dB
9251	8A/U	.405	#13 stranded copper	Solid polyethylene	97% bare copper	Non-contam. PVC	52	66%	2.2 dB
8267	213/U	.405	#13 stranded copper	Solid polyethylene	97% bare copper	Non-contam. PVC	50	66%	2.2 dB
8241	59/U	.240	#22 solid copper	Solid polyethylene	95% bare copper	PVC	73	66%	3.4 dB
8238	11/U	.405	#18 stranded tinned cop.	Solid polyethylene	97% bare copper	PVC	75	66%	2.0 dB
8213	11/U	.405	#14 solid copper	Cellular polyethylene	95% bare copper	PVC	75	78%	1.5 dB

Coax Seal™ Hand Moldable Plastic



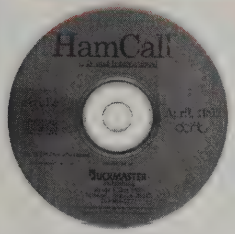
Effectively seals all types of coaxial fittings; baluns; antenna parts and connectors of any shape – adheres to vinyl and poly vinyl coax outer jackets. Simply wrap it on like regular tape, then mold it to shape. It stays flexible and sealed at any temperature for years to resist moisture penetration and deterioration. Permanent flexibility makes it possible to remove and re-install fittings, then re-seal them by simply re-forming the same material. Non-toxic, non-contaminating, non conductive. Roll, 1/2" wide x 60" long **(#104)** . **$2.49**

Circuit Works Conductive Pen

for Printed Circuit Boards

The Circuit Works Conductive Pen features a specially formulated silver thermoplastic designed to link circuit board components, repair traces, make jumpers and shield delicate electronics. Air drys in 3–5 minutes at room temperature and achieves maximum conductivity after 20 minutes. Can be heat cured in 1-2 minutes at 250-300°F. May be soldered at 350°F for <5 seconds after heat cure by using a low temperature tin, lead or silver solder with flux for best results. Traces 1/32" & wider – enough for 100 ft .**$10.95**

BUCKMASTER



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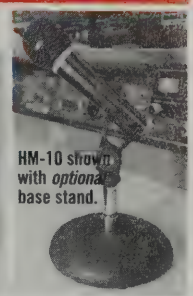
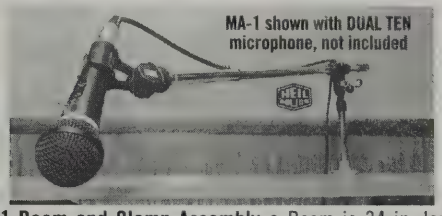
Microphones, etc.

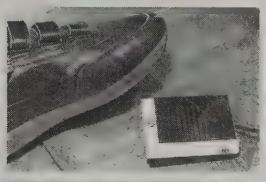


HM-10 • Studio-style microphone with handheld, boom mount, or desktop options. PTT or VOX, designed to work with virtually any late model transceiver Uses HC-4 or HC-5 Key Element. Specify ICOM, KENWOOD or YAESU radio, and the HM-10 will be shipped with the correct 7 ft. cable..... **$85.90**

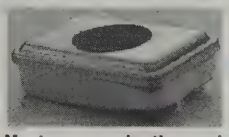
HM-10 DUAL • Amateur Radio's *ultimate* microphone. Similar to the HM-10 but has both HC-4 DX element and HC-5 Full Range element built-in, and switch selectable. Specify for ICOM, YAESU or KENWOOD transceivers..... **$131.90**



MA-1 Boom and Clamp Assembly • Boom is 34 in. long, attaches to desk or shelf, or hangs from ceiling. Swivels 360°, and places HM-10 or DUAL TEN microphone exactly where needed. Use FS-1 footswitch for hands free PTT..... **$49.95**



FS-1 Foot switch • For hands-free push to talk control of any transmitter. Supplied with 7 ft. cable with 1/4" phone plug attached. Non-skid rubber pad, top and bottom...**$24.95**



Heil Key Element
Replacement Microphone Cartridges

Most communications microphones today were designed for public address – not for SSB, with the frequency response for getting through pileups, or providing maximum voice clarity. The Key Element is tiny in size, and easily replaces existing cartridges in most microphones.

HC-4 Key Element • For Contest and DX work. Engineered with a high-pitched, pile-up busting frequency response. There's a 10dB peak at 2000Hz, and a sharp 12dB per octave roll off at 500Hz. Provides your rig with the extra audio punch needed for getting through the madness..... **$28.90**

HC-5 Key Element • For everyday rag chewing. Engineered for high articulation and maximum voice clarity. Not mushy, bassy paging-type audio, but very clear, easy to understand SSB audio. The response rolls off sharply under 300Hz and above 3100Hz. with a peak at 2100Hz..... **$28.90**

BM-10 • A specially designed communications boomset with dual headphones and microphone with HC-4 or HC-5 full range element on a adjustable boom. Headphones are soft and comfortable, and designed to seal out external noise. Specify for ICOM, KENWOOD or YAESU.**$71.90** or **$85.90 wired**

BM-5 • Single headphone version of the BM-10. For mobile use, or for those that desire one side, allowing for monitoring other activity. Specify for ICOM, KENWOOD or YAESU **$69.90**

TAKE THE WORLD ON THE ROAD

WORLDWIDE RECEIVERS FROM ICOM

IC-R100 MOBILE RECEIVER

Whether you're at home or in your car, the IC-R100 gives you continuous coverage from 100kHz-1856MHz in AM, FM and wide-band FM modes. Monitor VHF air and marine bands, emergency services, government and amateur stations. 121 fully programmable memory channels, multiple scanning systems and a built-in backup lithium battery.

IC-R1 HANDHELD RECEIVER

The smallest wideband handheld available today, the IC-R1 continuously covers 100kHz-1300MHz with AM, FM and wide-band FM modes. This tiny receiver goes anywhere you go, measuring just 1.37"W x 4.0"H x 1.4"D.

Easy operation is a snap with the IC-R1's Dual Frequency Selection (direct keyboard and rotary tuning), 100 memories and a 24-hour clock complete the world's smallest full-featured handheld receiver.

IC-R72 BASE RECEIVER

The IC-R72 continuously receives 100kHz-30MHz in SSB, AM and CW modes with exceptionally high sensitivity. An optional IF-8 provides FM reception. The IC-R72 incorporates a noise blanker, five scanning systems, external backup battery and built-in clock with Intel's DS3 System. The IC-R72 boasts a 100dB wide dynamic range while its easy to access keyboard provides convenient programming versatility...superb for shortwave listening!

See our complete line of quality receivers at your local authorized Icom dealer.

CORPORATE HEADQUARTERS:
ICOM America, Inc., 2380-116th Ave. N.E.
Bellevue, WA 98004
CUSTOMER SERVICE HOTLINE
(206) 454-7619
CUSTOMER SERVICE CENTERS:
18102 Skypark South, Suite 52-B
Irvine, CA 92714
1777 Phoenix Parkway, Suite 201
Atlanta, GA 30349
3071 - #5 Road, Unit 9
Richmond, B.C. V6X 2T4 Canada
2380-116th Ave. N.E., Bellevue, WA 98004

All stated specifications are subject to change without notice or obligation. All ICOM radios significantly exceed FCC regulations limiting spurious emissions. R1991

For full details call the Icom Brochure Hotline at 1-800-999-9877.

ICOM

Two Antennas Twice the Fun!

"...bringing you another nonstop 60 minutes of your kind of music from..."

"...fire has jumped to adjacent apartment building; requesting additional units..."

"...appears to be gang-related, large number of youths on foot moving toward..."

"...unidentified object does not respond to radio; attempting to make contact..."

"...blackout apparently caused by car striking utility pole at corner of..."

"...search from the northwest quadrant and proceed south, maintain visual..."

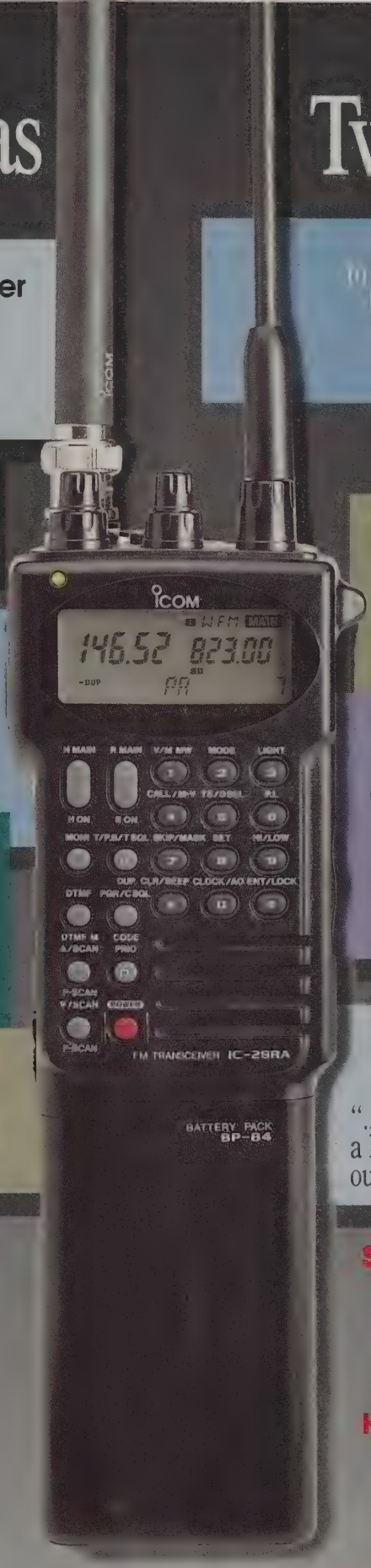
"...do not, repeat, do not approach intake by boat since dock is damaged in..."

"...campers are advised to leave upper elevations before sundown due to..."

"...conditions for trout in the deeper pools best before 6 am; they're taking..."

"...bright yellow, red trim Piper last reported lost and disoriented in fog near..."

"...sending a chopper over to have a look before the news people find out about..."



IC-2SRA

A 2-Meter Transceiver Plus A WideBand Receiver

Two antennas on the outside tell you there's twice the fun on the inside! ICOM designed two fine radios into one compact, durable unit— the IC-2SRA!

You can talk on 2 meters (a 440 model is also available) while monitoring another frequency on the same band, or listen in to the fascinating wideband world of 25-905 MHz.

The 25-905 MHz (guaranteed specifications!) receiver lets you keep track of all the exciting activity on VHF/UHF— emergency, aircraft, satellite, military and marine frequencies— plus commercial FM & TV audio!

Separate Controls

Truly two radios in one, with separate volume, squelch & tuning controls for each band. The large, easy-to-read function display shows both operating frequencies in use, S-indicators, and the memory settings for both bands.

High Performance Features

We paid special attention to the battery pack: it has a long duty cycle, so your fun won't fade when you least expect it.

Scanning, memories, clock/timers, pager, code squelch, power saver— they're all in there, along with the highest performance feature of them all: it's an ICOM!

For more information, call our Brochure Hotline
1-800-999-9877

ICOM

ICOM America Inc. 2380-116th Avenue N.E., Bellevue, WA 98004

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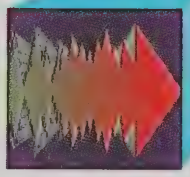
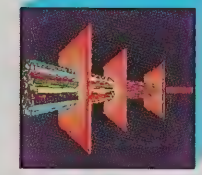
More of what you buy a radio for



More Punch!

Our dynamic **Speech Compressor** increases transmitter output signal strength, to punch through crowded bands and less-than-perfect conditions.

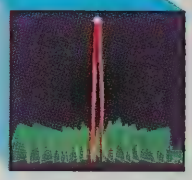


More Clarity!

All other radios in this price class use double conversion circuitry. ICOM uses **Triple Conversion** to improve in-coming signal quality and suppress interference.

More Speed!

Band Stacking Register snaps you back to the last frequency you were on — for contesting, multi-banders. **Direct Digital Synthesis** means fast digital T/R.



More Selectivity!

You won't find **PassBand Tuning** at twice the price! PBT lets you narrow the IF passband width, to zero in on just the signal you want to hear.

IC-728 HF All-Band Transceiver

More of what you buy a radio for! The entry-level IC-728 lets you *hear and be heard* better than any other transceiver in its class... because if offers high-performance features previously available only on higher-priced models.

IC-729 HF All-Band Plus!

The NEW IC-729 offers every features of the IC-728, **plus 6-meters, AM/FM, and a tone encoder!** It's like getting the best 6-meter radio for approximately $300! *Attention NoCoders: the IC-729 means you can learn on the best, then expand your world as you upgrade your license!*

Now Available!
The AT-160 Antenna Tuner

Fast, compact, simple & smart, the CPU-controlled AT-160 matches your 160M-10M antenna in less than 3 seconds, even when switching bands! Designed as a component, it lets you customize your station. The compact AT-160 mounts directly to the transceiver, forming one integrated unit, automatically controlled from the transceiver.

For more information, call
1-800-999-9877

ICOM

Experience the Quality.®

ICOM America, Inc., 2380-116th Avenue N.E., Bellevue, WA 98004

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No other Multi-Mode gives you all these features -- *not one!*

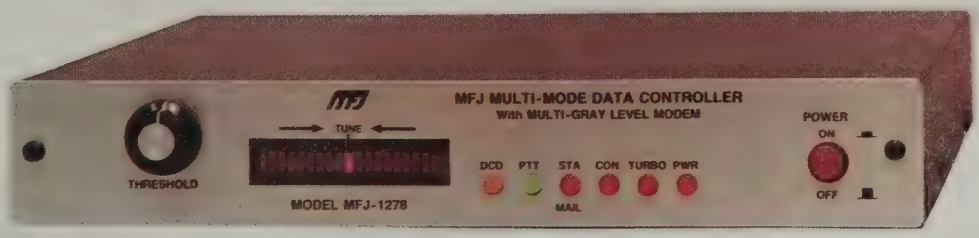
. . . only the easy-to-use MFJ-1278 Multi-Mode and MultiCom™ software gives you all these features plus 9 digital modes . . . Color SSTV, 16 Gray Level FAX, Packet, AMTOR, RTTY, ASCII, Navtex, CW, Memory Keyer

MFJ-1278 Multi-Mode

$249.95

MFJ-1289 MultiCom™

$59.95



Real Time Color SSTV

- Transmit and Receive Color SSTV
- Robot Color: 72, 36 Seconds
- Robot B/W: 8, 12, 24, 36 Seconds
- Scotty Color: 1 and 2
- Martin Color: 1 and 2

16 Gray Levels FAX/SSTV Modem

- 16 Gray Levels Weather FAX
- 16 Gray Levels AP Wire FAX
- 16 Gray Levels B/W SSTV

Real-Time Packet Pictures

- SVGA, VGA, EGA, CGA Color Packet Pictures

New *Enhanced* Mailbox

- Expandable 32K, 128K or 512K
- Separate callsign for mailbox
- Mailbox ON during packet connects
- Auto/Manual mail forwarding
- Auto/Manual reverse mail forwarding
- Remote Sysop access, Sysop paging
- Chat mode, mailbox C-text
- "Has mail" LED indicator

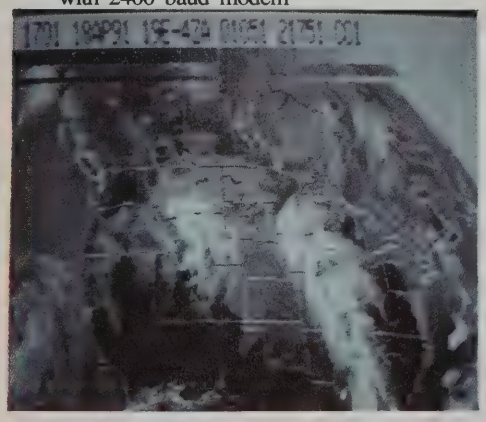
High Speed Modems

- 2400 baud Modem, $89.95
- 9600 baud G3RUH Modem, $109.95
- Plugs inside MFJ-1278
- Selectable from keyboard
- MFJ-1278 Turbo, $359.95 with 2400 baud modem

More MFJ *Exclusive* Features

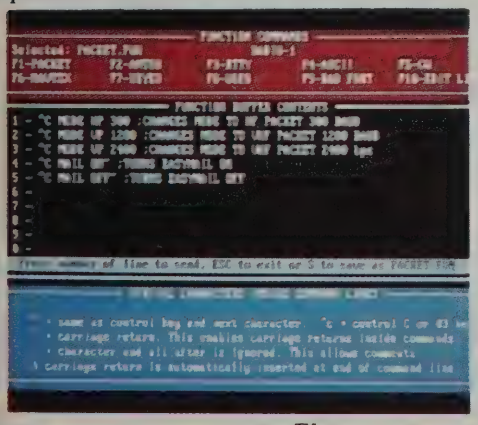
- Automatic Signal Analysis™ for HF Packet and AMTOR as well as RTTY and ASCII
- Automatic Digipeater Routing™
- QSO *and* transfer files simultaneously
- Dedicated MARS mode
- Built-in printer port, sidetone amplifier
- *Individual* radio port level control
- *Stored* parameters for each mode
- CW iambic paddle input
- Call Alert Beeper™
- Built-in packet connect bell
- IC sockets used throughout
- One year *unconditional* guarantee

***Full* Color SSTV picture actually received on** 14.230 MHz, using Robot 72 second format. Transmit and receive color and black and white SSTV pictures.



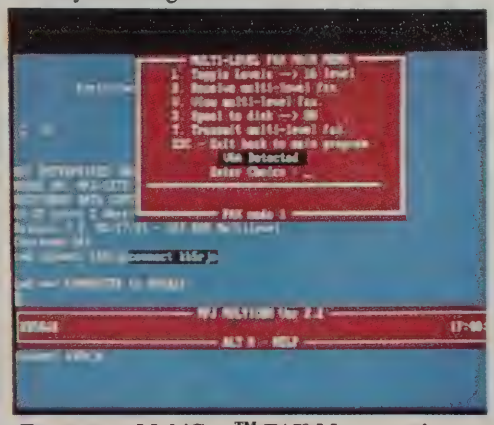
16 Gray Levels WeFax map actually received on 16.410 MHz. Only MFJ-1278 and MultiCom™ gives you a 16 gray level modem for transmitting and receiving WEFAX, FAX and Color SSTV.

256 Color VGA Packet Picture actually received on packet. Join the fun of packet picture passing. See brilliant full color pictures paint across your screen as they are being received.



Easy and simple . . . MultiCom™ Operation Menu lets you select each mode by pressing a *single* key. Each mode has 10 user programmable buffers.

16 Gray Levels AP Wire Photo FAX actually received on 20.738 MHz. See tomorrow's news today before it appear in your newspaper.



Easy to use MultiCom™ FAX Menu--getting on FAX and SSTV is as simple as pressing one or two keys . . . it couldn't be easier!

New MultiCom™ Terminal Program

MFJ MultiCom™ Starter Pack complete with computer interface cable and instruction. Order MFJ-1289, $59.95 IBM compatibles, MFJ-1282B, $39.95 C64/128, MFJ-1290, $49.95, Amiga MFJ-1287B, 59.95 Macintosh.

Pre-wired Cables and TNC/Mic Switch

Solves your wiring headache with the MFJ pre-wired TNC-to-radio cables, $14.95. TNC/Mic switch allows you to switch between Microphone and MFJ-1278 without disconnecting cables. MFJ-1272B, $34.95.

Memory Expansion Board with firmware

MFJ-46A, $49.95, 32K RAM; MFJ-46B, $69.95, 128K RAM or MFJ-46C, $239. 95, 512K RAM.

MFJ-1278 Real Time Clock

MFJ-43, $29.95. Ends frustration of setting TNC clock everytime you turn it on. Plugs into RAM socket. Works with MFJ-1278, MFJ TNCs and TAPR TNC clones.

Firmware 3.6 and MultiCom™ Upgrade 2.2

New firmware 3.6 upgrade, MFJ-48, $24.95. MultiCom™ 2.2 upgrade, MFJ-49B, $24.95, available.

Picture Perfect Video Digitizer

MFJ-1292, $199.95. Creates SSTV, FAX, packet picture.

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5710 W. Good Hope Road: Milwaukee, WI 53223

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Las Vegas, NV	800-634-6227

Features in this ad uses MFJ-1278 Firware 3.6, MultiCom™ 2.2 and VGA graphic. Features may vary with other MFJ-1278 firmware, terminal program or other graphics system.

MFJ TUNERS

MFJ's *world famous* 3 KW Versa Tuner V

If you won't settle for less . . . here is the finest 3 KW tuner money can buy!

The MFJ-989C is not for everyone.

However, if you make the investment, you'll get the finest 3 KW tuner money can buy. Here's why.

Massive Transmitting Capacitors

You get two *massive* 250 pf transmitting variable capacitors with detailed logging scales. They can handle *amps* of RF current and withstand 6000 RF volts because the plates are smoothed and polished and have extra wide spacing.

Precision Roller Inductor

A precision roller inductor lets you tune your SWR down to the absolute minimum. A 3-digit turns counter plus a spinner knob gives you exact inductance control.

Ball bearings on both the front and back shafts give you a velvet smooth vernier feel. Steel end plates and steel shafts give you lifetime durability.

You won't have arcing problems with this roller inductor. That's because firm springs put considerable pressure on a plated contact wheel for excellent electrical contact.

Wide, low inductance straps are used for high current connections and a new core gives you excellent RF properties for minimum loss.

MFJ-989C **$299.95**

Cross-Needle Meter

You get a lighted *peak* and average reading Cross-Needle SWR/Wattmeter with 200 and 2000 watt ranges. Its new directional coupler gives you accurate SWR and power readings over the entire 1.8 through 30 MHz range.

Super Heavy Duty Balun

You get a super heavy duty current balun for balanced lines. It's made with two giant 2 1/2 inch powder iron toroid cores and wound with *teflon* wire connected to high voltage ceramic feedthru insulators. It lets you operate high power into balanced feedlines out core saturation or voltage breakdown.

Ceramic Antenna Switch

You get a two wafer 6 position *ceramic* antenna switch with extra large contacts for trouble free switching.

Plus much, much more

You also get a *built-in 300 watt dummy load,* full one year *unconditional* guarantee, flip stand, all aluminum cabinet, tough baked on paint, locking compound on all nuts and bolts. 3 KW PEP. Meter lamp needs 12 volts. Compact 10¾x4½x15 in. Made in the USA. Add $10 s/h.

Don't settle for less–get yours today!

MFJ Deluxe 300 Watt Tuner

MFJ-949E **$134.95**

More hams use the MFJ-949E than any other antenna tuner in the world! **Why?** Because the MFJ-949E gives you proven reliability, the ability to match just about anything and a one year *unconditional* guarantee.

You get a lighted *peak* and average reading Cross-Needle SWR/Wattmeter, antenna switch, 4:1 balun for balanced lines, 1.8-30 MHz coverage and a *full size* dummy load that easily handles 300 watts of abusive tune-up power.

The inductor switch is *specially designed* to withstand the extreme voltages and currents that are developed in your tuner—it's not an underrated off-the-shelf switch that can put you off-the-air.

Each MFJ-949E aluminum cabinet is chemically etched to strongly bond MFJ's tough *baked-on* paint. You won't find a tougher, longer lasting finish anywhere.

MFJ-948 *New 300 Watt* Tuner

MFJ-948 **$119.95**

If you don't need a dummy load but want *all* the other features of the MFJ-949E, choose the MFJ-948 for $129.95.

The MFJ-948 features a *peak* reading *lighted* Cross-needle meter with a built-in lamp switch, one year *unconditional* guarantee and is made here in the USA.

MFJ's *smallest* Versa Tuner

MFJ-901B **$59.95**

The MFJ-901B is our smallest -- 5x2x6 inches -- (and most affordable) 200 watt PEP tuner -- when both your space **and** your budget is limited. Good for matching solid state rigs to linears.

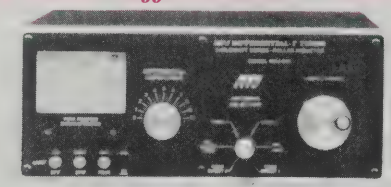
MFJ'S *Super Value* Tuner

MFJ-941E **$99.95**

The new MFJ-941E gives you a 300 watt PEP tuner that covers everything from 1.8-30 MHz -- plus you get a cross-needle meter, antenna switch and balun . . . for an incredible $109.95. Lamp uses 12 VDC or 110 VAC with MFJ-1312, $12.95.

Antenna switch selects 2 coax lines (direct or through tuner), random wire, balanced line or external dummy load. 4:1 balun. 1000 volt capacitors. Measures 10-5/8" x 2-7/8" x 7".

2-Knob *Differential-T*™ Tuner



MFJ-986 **$259.95**

The new MFJ-986 Differential-T™ 2-knob tuner uses a differential capacitor to make tuning foolproof and easier than ever. It ends constant re-tuning with broadband coverage and gives you minimum SWR at only *one* best setting. Handles 3 KW PEP.

Roller inductor makes tuning smooth and easy. Turns counter lets you quickly re-tune to frequency.

MFJ's peak and average reading cross-needle meter reads forward/reflected power in 200/50 and 2000/500 watt ranges. Meter lamp uses 12 VDC or 110 VAC with MFJ-1312, $12.95. Current balun reduces feedline radiation and forces equal currents into antenna halves that are not perfectly balanced. It covers 1.8-30 MHz. Get yours today! Add $10 s/h.

MFJ's *Random Wire* Tuner

MFJ-16010 **$39.95**

Operate all bands anywhere with any transceiver with the MFJ-16010. It lets you turn a random wire into a transmitting antenna. 1.8-30 MHz. 200 watts PEP. Ultra small 2"x3"x4".

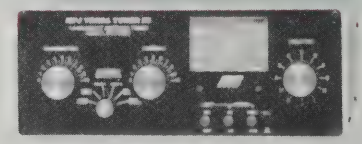
MFJ's *Mobile* Tuner

MFJ-945D **$84.95**

Don't leave home without this *mobile* tuner! Have an uninterrupted trip as the MFJ-945D extends your antenna bandwidth so you don't have to stop, go outside and adjust your mobile whip.

Small 8 x 2 x 6 inches uses little room. *Lighted Cross-Needle* SWR/Wattmeter makes tuning easy while in motion. Has lamp switch. 1.8-30 MHz. 300 watts PEP. Mobile mount, MFJ-20, $4.95.

MFJ's *Versatile 1.5 KW* Tuner



MFJ-962C **$209.95**

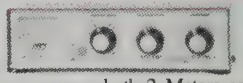
MFJ-962C lets you use your barefoot rig now and have the capacity to add a 1.5 KW PEP amplifier later. It covers 1.8-30 MHz.

You get MFJ's **peak** and average reading Cross-needle SWR/Wattmeter. It reads forward/reflected power in 200/50 and 2000/500 watt ranges. Lamp uses 12 VDC or 110 VAC with MFJ-1312, $12.95.

Plus . . . 6-position antenna switch and teflon wound balun with ceramic feedthru insulators for balanced lines. 10¾ x 4½ x 14-7/87 in. $10 s/h.

MFJ's *VHF or UHF* Tuners

MFJ-921 or MFJ-924 **$69.95**



MFJ-921 VHF tuner covers both 2 Meters and the 220 MHz bands. **MFJ-924** covers **440** MHz. Built-in **SWR/Wattmeter.** 8" x 2½" x 3". 2-knob tuning convenient for mobile or base.

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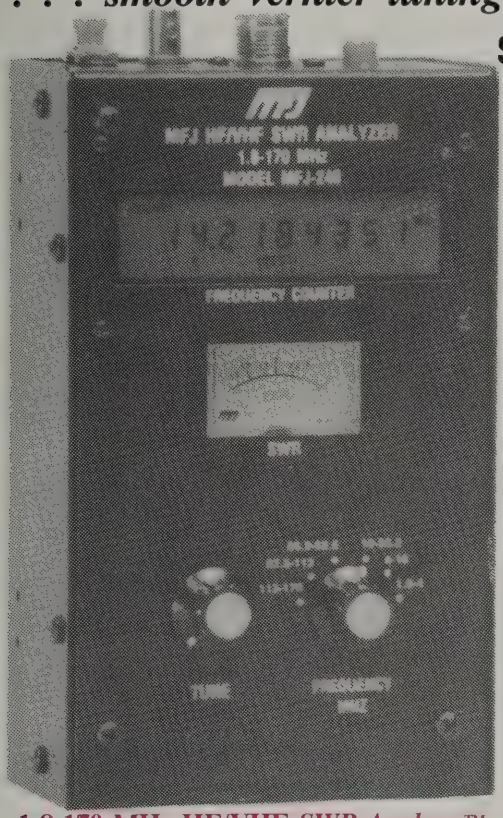
Orlando, FL	**800-327-1917**
Las Vegas, NV	**800-634-6227**

MFJ *HF/VHF* SWR Analyzer™

. . . covers 1.8-170 MHz continously . . . built-in 10 digit LCD frequency counter . . . smooth vernier tuning . . .



MFJ-249
$179.95

MFJ's newest, most versatile *SWR Analyzer*™ covers more frequencies than any MFJ SWR Analyzer™ – 1.8-170 MHz *continuously*. It has smooth vernier tuning and a built-in 10 digit, high accuracy, high contrast LCD frequency counter that makes reading SWR in the sun easy.

This *wide range* MFJ-249 covers all frequencies between 1.8-170 MHz including all ham bands from 160 Meters to 2 Meters, commercial 2-way radio, police, fire, FM broadcast, military, marine and shortwave.

A *velvet smooth* vernier reduction drive makes it easy to set frequency prescisely.

It's battery powered and handheld size. You can take it right to your antenna and work on it until it's just the way you want it.

Here's what it does . . .

The MFJ-249 *SWR Analyzer*™ gives you a *complete* picture of your antenna SWR over an entrie band -- *without* a transmitter, SWR meter or *any* other equipment!

Reading SWR is automatic. All you do is plug in your antenna, set your MFJ-249 *SWR Analyzer*™ to the frequency you want and read your SWR -- it couldn't be easier!

Here's what you can do . . .

You can instantly find your antenna's true resonant frequency right at your feedline -- that's somehting a noise bridge just can't do.

You can shorten or lengthen your dipole or mobile whip and see the effect immediately.

You can monitor how SWR changes as you adjust your beam or vertical -- you'll know right away if you should lengthen or shorten it.

You can see how SWR varies over an entire band . . . find 2:1 SWR bandwidths . . . adjust mobile antennas in seconds . . . find all resonant frequencies of multiband verticals, dipoles and beams . . . tune up your antenna tuner without transmitting.

You get *three* instruments in one

You get *three* instruments in one . . . a low distortion RF signal generator . . . a sensitive high accuracy 170 MHz frequency counter . . . an *SWR Analyzer*™

Has BNC connector for use as high accuracy frequency counter. Counter has four gate times, .1 Hz resolution, 1 ppm 10 MHz crystal time base with adjustable calibration.

Use 6 AA cells or 110 VAC with MFJ-1312B, $12.95 4x2½x6¾ inches.

1.8-170 MHz HF/VHF *SWR Analyzer*™

MFJ-209
$99.95

If you don't need a built-in frequency counter but want 1.8-170 MHz *continuous* coverage and smooth vernier tuning, choose the MFJ-209.

It'll help get your antennas in tip-top shape.

Same as MFJ-249 without LCD frequency counter. Has jack for external frequency counter. Use 6 AA cells or 110 VAC with MFJ-1312B, $12.95. 4x2½x6¾ inches.

10-160 Meter HF *SWR Analyzer*™

MFJ-207
$74.95

If you're an HF man, this compact MFJ-207 HF *SWR Analyzer*™ will help you build antennas that'll make working DX almost routine.

Just plug in your coax to find the SWR of any HF antenna on any ham band 10-160 Meters. Has jack for external frequency counter. Use 9 volt battery or 110 VAC with MFJ-1312, $12.95. 7½x2½x2¼ inches.

2 Meter VHF *SWR Analyzer*™

MFJ-208
$74.95

MFJ-208 2 Meter VHF *SWR Analyzer*™ finds the SWR of any antenna from 142-156 MHz.

Jack for external frequency counter. Use 9 volt battery or 110 VAC with MFJ-1312, $12.95. 7½x2½x2¼ inches.

For Commercial VHF Radio

Same as MFJ-208 but for commercial VHF. **MFJ-217,** $74.95, covers 30-50 MHz and MFJ-218, $74.95, covers 150-170 MHz.

MFJ *Bandswitched Dip Meter*™

MFJ-203
$89.95

The MFJ-203 is a sensitive *Bandswitched Dip Meter*™ that covers all hams bands from 160-10 Meters. There are no plug-in tuning coils to keep up with or break.

It's the easiest *dip meter* you'll ever use -- just tune for a dip. There's no sensitivity control to constantly adjust.

Saves time and takes guesswork out of pruning antennas, winding coils, tracking down parasitics, measuring inductance and capacitance, measuring velocity factor and electrical lengths of coax. Determine resonant frequency of tuned circuits and antennas. Measure Q of coils. Also use as signal generator.

Has detachable coupling coil, dual FET oscillator, op-amp meter amplifier and jack for external frequency counter. Use 9 volt battery or 110 VAC with MFJ-1312B, $12.95. 7½x2½x2¼ inches.

MFJ *Antenna Resistance Meter*™

MFJ-205
$84.95

Need to measure the feedpoint resistance of your antenna?

Simply plug your coax into the MFJ-205 *Antenna Resistance Meter*™, set it to the frequency you want and read your feedpoint resistance *directly* from it's calibrated resistance meter. It's perfect for designing impedance matching networks for your antenna.

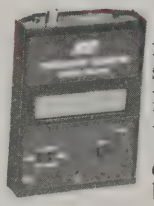
Reads up to 600 ohms RF resistance and covers all ham bands 160-10 Meters.

With a *conventional* antenna bridge you have to constantly alternate between adjusting the null and frequency controls until you find the best null.

You can also determine resonant frequency and if your antenna is too long or too short.

Has jack for external frequency counter. Can be used as an RF signal generator. 7½x 2½x2¼ inches. Use 9 volt battery or 110 VAC with MFJ-1312B, $12.95.

600 MHz 10 Digit LCD Counter



MFJ-346
$179.95

Add this handy MFJ-346 frequency counter to your station and get high accuracy frequency measurements to 600 MHz with 10 digit precision.

Easy-to-read 1/4 inch LCD digits don't wash out in bright sunlight like LEDs.

Compatible with MFJ *SWR Analyzers*™, *Dip Meter*™, *Antenna Resistance Meter*™ and *Antenna Bridge*™.

Four gate times, .1 Hz resoultion, high accuracy 1 ppm 10 MHz crystal time base.

Use 9 volt battery or 110 VAC with MFJ-1312B, $12.95. 4x1½x5¼ inches.

AMATEUR ELECTRONIC SUPPLY, INC.
5710 W. Good Hope Road; Milwaukee, WI 53223

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Orlando, FL	800-327-1917
Las Vegas, NV	800-634-6227

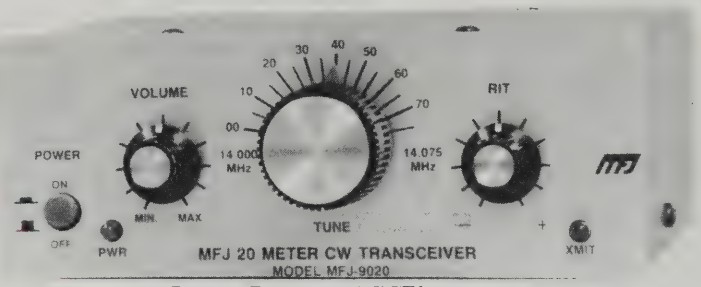
New MFJ CW Transceivers

. . . throw this *tiny* CW rig in a corner of your briefcase and enjoy DXing and ragchewing wherever you go . . . you get a high performance superhet receiver, crystal filter, RIT, AGC, vernier tuning, sidetone, speaker, up to 5 watts output, semi/full-break-in . . .

MFJ-9040, MFJ-9030, MFJ-9020, MFJ-9017, MFJ-9015

$154.95

• *NEW! 5 Bands . . . Models for 40, 30, 20, 17, 15 Meters*



Throw a tiny *MFJ CW Transceiver* in a corner of your briefcase and enjoy DXing and ragchewing wherever you go.

You'll turn lonely nights into exciting adventures as you contact fellow amateurs around the world.

With 5 watts you'll have plenty of power to work the world even with a makeshift antenna.

At home with a good dipole, vertical or beam, you'll be able to work almost anyone you hear — can you imagine earning DXCC with 5 watts?

Big gun DX'ers: Try a new DX challenge for the price of a simple station accessory.

It's good enough to be your only rig — you get a high performance superhet receiver, razor sharp 8-pole crystal filter, RIT, AGC, vernier tuning, sinewave sidetone, built-in speaker, headphone jack, adjustable semi and full QSK break-in, up to 5 watts output plus much more.

Tiny 6x6½x2½ inches. Weighs 1-3/4 lb. Uses 12-15 VDC. Optional matching antenna tuner, power pack, antenna, plug-in Curtis chip keyer and plug-in narrow audio filter.

Now 5 Bands . . .

MFJ-9040 covers 40 Meters: 7.000-7.150 MHz. **MFJ-9030** covers 30 Meters: 10.100-10.150 MHz. **MFJ-9020** covers 20 Meters: 14.000-14.075 MHz. **MFJ-9017** covers 17 Meters: 18.068-18.110 MHz. **MFJ-9015** covers 15 Meters: 21.000-21.200 MHz. $179.95 each.

40 and 15 Meter Models *include Novice and Technician Band.* Your perfect *first* radio.

High Performance Superhet Receiver

You get a high performance superhet receiver with a selective double tuned front end and double-balance mixer. It's sensitive enough to copy weak DX signals down to the noise floor yet resist overload when a strong local comes on.

What you hear is what you get — images and birdies are eliminated with this single conversion design and a high IF.

A ball bearing reduction drive and linear frequency readout gives you smooth precise tuning.

Half watt of audio gives you plenty of volume from headphones and built-in speaker.

Razor Sharp Selectivity

You'll slice through QRM and pull weak ones out of the mud with an 8-pole crystal filter that gives you razor sharp selectivity with steep sided skirts.

Instant Recovery AGC™

Weak DX signals are just as loud as strong local ones because a *graceful* Automatic Gain Control (AGC) keeps your audio level constant.

You get smooth break-in operation because MFJ's exclusive *Instant Recovery AGC™* gives you *instantaneous* transmit recovery.

True Receiver Incremental Tuning (RIT)

True Receiver Incremental Tuning (RIT) lets you dodge QRM and compensate for other's drift without moving your transmit frequency.

MFJ *Integrated* CW Station

Transceiver, tuner, power pack* fastens together *to form tiny 6x6½x8½ inch integrated CW station.

$299.95

Save $39.85! $299.95 buys complete MFJ CW Station. Includes *MFJ CW Transceiver,* MFJ-971 tuner, MFJ-4114 power pack, portable antenna ... order MFJ-9140B, 40M; MFJ-9130B, 30M; MFJ-9120B, 20M; MFJ-9117B, 17M; MFJ-9115B, 15M. $339.80 each if purchased separately (keyer and filter not included.) **MFJ-27,** $4.95. Handle for CW Station.

Enough Power to Work the World

With 5 watts you'll have plenty of power to work the world even with a makeshift antenna.

You can use any antenna with an SWR up to 3:1. These *MFJ CW Transceivers* are rugged enough to withstand momentary antenna opens or shorts without damage.

If you're really into QRP you can reduce your power down to milliwatts.

A pleasing *sinewave* sidetone lets you monitor your sending.

You also get adjustable semi and *full QSK* break-in plus adjustable automatic transmit offset.

You'll get hours of battery operation — draws only 50 ma. receive, 1 amp transmit.

Looks Great!

Each *MFJ CW Transceiver* is housed in an attractive matte-black aluminum enclosure with a deluxe brushed-aluminum front panel and matched knob set. Machine screws and pressed-in PEM nuts are used — not sheet metal screws.

Has power-on LED, transmit LED and SO-239 coax connector for antenna.

Designed by Rick Littlefield, K1BQT

The *MFJ CW Transceivers* were designed by Rick Littlefield, K1BQT. He's known worldwide for his reliable high-performance transceiver designs and countless articles.

K1BQT has given careful attention to board layout, heatsinking, mechanical rigidity, voltage regulation and component selection to ensure stable operation and long-term reliability.

It meets or exceeds all FCC requirements.

Comes fully assembled, tested and guaranteed to work

Your factory built *MFJ CW Transceiver* is ready to work DX right out of the box. It's not a kit of parts you have to put together and hope you can get to work.

Free *MFJ CW Transceiver* Manual

Manual includes operating instructions, setting up your station, DX techniques, antenna suggestions, trouble shooting guide, theory of operation, alignment procedures, parts placement, schematic, parts list and more.

For a *free* manual write or call MFJ.

Plug-in Keyer and Narrow Filter (Optional)

MFJ-412 Curtis chip iambic keyer, $39.95.

MFJ-726 narrow audio filter, $29.95. Has In/Out switch.

Each plugs into an *MFJ CW Transceiver.* Controls on rear panel. No soldering or modifications needed.

No Matter What™ Guarantee

You get MFJ's famous one year ***No Matter What™*** *unconditional* guarantee. That means we will repair or replace your *MFJ CW Tranceiver* (at our option) *no matter what* for a full year.

Continuing Service

MFJ Customer Service Technicians will help you keep your *MFJ CW Tranceiver* performing flawlessly — no matter how long you own it. Just call our toll-free help line 800-647-TECH(8324) — *an MFJ exclusive.*

Made in USA

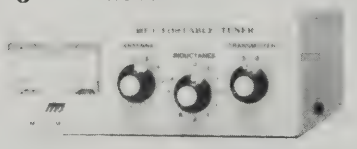
MFJ CW Transceivers are made in the USA. Help our fellow Americans by keeping our money here -- buy Made in USA.

Call AES Today

Enjoy DXing and ragchewing wherever you go. Call your favorite dealer today and get your *MFJ CW Transceivers*. Don't leave home without it!

MFJ *Portable* Operating Accessories

MFJ *Portable* Antenna Tuner

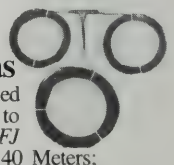


MFJ-971 **$84.95** **Tunes** coax, balanced lines, random wire 1.8-30 MHz. Cross-Needle SWR/Wattmeter has two switchable ranges: 30, 300 or user selectable 6 watt ranges. Tiny 6x6½x2½ inches matches *MFJ CW Transceivers*. Fastens to *MFJ CW Transceivers* and/or MFJ-4114 Power Pack to form single unit.

MFJ *Portable* Power Pack

MFJ-4114 **$64.95** **Matching** *portable* Battery/AC Power Pack for *MFJ CW Transceivers* or other low power rig. Provides power from Ni-cad D cells, regular or alkaline D cells or 110 VAC. Has charging circuit for Ni-cads D cells. 6x6½x3½ inches. Fastens to *MFJ CW Transceivers* and/or MFJ-971. Batteries not included.

MFJ *Portable* Antennas



$34.95 *each* **Efficient** low SWR folded dipole. Lightweight, easy to carry, easy to put up. Perfect for *MFJ CW Transceivers*. Order MFJ-1774, 40 Meters; MFJ-1773, 30 Meters; MFJ-1772, 20 Meters; MFJ-1771, 17 Meters; MFJ-1770, 15 Meters.

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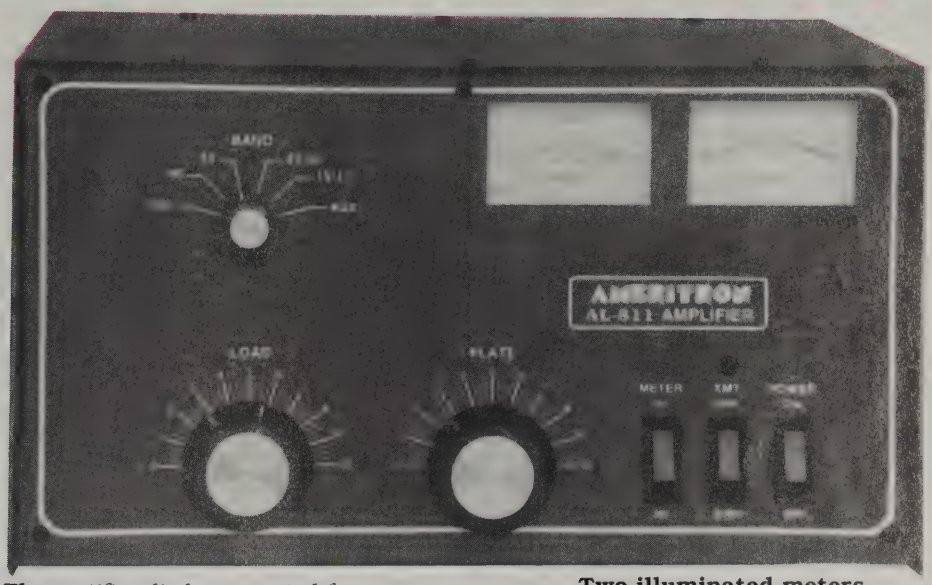
600 WATTS OUT . . . $589.95

Ameritron's new . . .

AL-811 linear amplifier gives you plenty of power to bust thru QRM.

You get a quiet desktop linear that's so compact it'll slide right into your operating position -- you'll hardly know it's there . . . until QRM sets in. And you can conveniently plug it into your nearest 120 VAC outlet -- no special wiring needed.

You get three tough 811A transmitting tubes, extra heavy duty power supply, all HF band coverage, pressurized ventilation, tuned input, dual illuminated meters, adjustable ALC and much more . . . for an incredible $589.95 . . .



The first 600 watts makes the most difference

The AL-811 gives you 600 watts PEP output — that's nearly 2 full S-units over your barefoot rig.

That could mean the difference between hearing, "You're Q-5 armchair copy" and, "Sorry can't copy you, too much QRM."

Now you won't have to stand aside while the "big guns" steal your DX. You'll be able to log some of those stations first.

Going from 600 watts to the full legal limit gives you less than one S-unit increase. But is that fraction of an S-unit worth the 3 to 4 times more money it'll cost you?

The AL-811 gives you a powerful punch at a price that's easy on your wallet.

All band, all mode coverage

The AL-811 covers all HF bands (10/12 meters with easy user mod). There's no compromise on WARC and most MARS bands — you get a 100% rated output.

You can operate the AL-811 on all modes. You get 600 watts output PEP SSB and 500 watts output CW. You even get 400 watts on demanding continuous carrier modes like RTTY, SSTV, FM and AM.

How the low cost 811A tube resists premature failure - even when your amplifier is mistuned

811A tubes resist premature failure in two ways.

First, they're constructed with widely spaced elements that minimize the chance of elements touching and causing a short — even if the plate gets hot enough to melt.

Second, they use a directly heated thoriated tungsten filament cathode that prevents the electron emitting layer from instantly stripping off — even if mistuning causes a sudden, severe current overload.

Indirectly heated oxide cathode tubes (like the $400 3CX800A7) can be rendered instantly useless if their electron emitting layer is stripped off because of a severe current overload due to mistuning.

The Ameritron AL-811 is excellent for the newcomer because it's tough enough to withstand momentary mistuning. And the tubes are so inexpensive that you can replace one for mere pocket change.

The Ameritron advantage: extra heavy duty power supply that gives you peak performance year after year

The heart of the AL-811 power supply is its heavy duty power transformer with a high silicon steel core weighing a hefty 17 pounds.

A full wave bridge using 52.5 ufd of total capacitance (four 210 ufd, 470 volt capacitors) produces 1500 volts under full load and 1700 volts no load. That's excellent high voltage regulation!

Full height computer grade filter capacitors with screw terminals are used — not short stubby, light duty soldered-in "high technology" capacitors that can't dissipate the heat generated by high current.

The rectifier diodes are rated for a massive surge current of 200 amps. They won't blow even if you accidentally short the high voltage supply.

Wire wound, 7 watt, 50 K ohm equalizing resistors safely protect each filter capacitor — not 2 watt, 100 K ohm carbon composition resistors that can open and cause your filter capacitors to explode or fail.

The Ameritron AL-811 power supply is built tough so you get peak performance year after year.

Tuned input provides excellent load for any rig

A Pi-Network *tuned input* provides a 50 ohm load for your rig. Even fussy solid state rigs can deliver their full drive to AL-811.

Low loss slug tuned coils — tunable from the rear panel — let you optimize performance. High quality low drift silver mica capacitors maintain proper tuning.

800 WATTS OUT . . $719.95

from *FOUR* fully neutralized 811A tubes

Only the Ameritron AL-811H gives you *four fully neutralized* 811A transmitting tubes. You get absolute stability and surperb performance on higher bands that *can't* be matched by un-neutralized tubes.

NEW

Ameritron mounts the 811A tubes *vertically* — not horizontally — to prevent hot tube elements from sagging and shorting out. Others, using *potentially damaging horizontal mounting*, require special 811A tubes to retard sagging and shorting.

A powerful 20 CFM computer grade blower — not an open frame phonograph motor — draws in cool air to pressurized the cabinet and efficiently cool your 811A tubes for extra long life.

You also get efficient full size heavy duty tank coils, full height computer grade capacitors, heavy duty high silicon core power transformer, slug tuned input coils, operate/standby switch, transmit LED, ALC, dual meters, QSK compatibility with QSK-5 plus much more.

Output tank: optimum Q on each band

The low loss pi-network output tank of the AL-811 has been carefully designed for optimum Q on each band and built with quality RF components.

The result is peak performance over each band, wide impedance matching range and exceptionally smooth tuning with efficiencies close to 70%. Even a 3:1 SWR load won't damage the tubes or tank components.

A ball bearing vernier reduction drive makes plate tuning precise and easy.

Quiet pressurized ventilation keeps your tubes safely cooled

A quiet fan pressurizes the cabinet with over 20 cubic feet per minute of cool air.

This large volume of air flow keeps the 811A tube temperature safely below the tube manufacturer's rating — even with a key down carrier at 500 watts output.

Two illuminated meters

Two illuminated meters give you a clear picture of your AL-811 operating conditions so you can tell right away if something is wrong.

The Grid Current meter continuously checks for improper loading. The other meter switches between high voltage and plate current to warn of abnormal conditions.

Ameritron exclusive Adapt-A-Volt™ power transformer

Too high line voltage stresses components and causes them to wear out and fail. Too low line voltage causes a "soft-tube" effect — low output and signal distortion.

Ameritron's exclusive Adapt-A-Volt™ power transformer has a special buck-boost winding that lets you compensate for stressful high line voltage and performance robbing low line voltage.

This makes your components last longer and gives you peak performance — regardless of your line voltage.

Plus more . . .

An Operate/Standby switch lets you run barefoot, but you can instantly switch to full power if you need it.

A transmit LED tells you when your rig is keying your AL-811.

A 12 VDC keying relay makes it compatible with all solid state and tube rigs. A built-in back-pulse cancelling diode protects your rig's keying circuit.

Shielded RF compartment. One year limited warranty. Compact 16" D x 13¾" W X 8" H. 30 pounds. UPS shippable. Shipped with transformer installed and wired for 120 VAC. Draws 8 amps at 120 VAC. Export model Al-811X wired for 240 VAC and includes 10 and 12 meters.

Made in USA

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Ameritron *doubles* average SSB power . . .

NEW AL-80B kilowatt output desktop linear can double your average SSB power output with high-level RF processing . . . it also runs cooler because its Eimac 3-500Z tube completely turns off between words . . .

Ameritron's all NEW AL-80B kilowatt *output* desktop linear can *double* your average SSB power output with high-level RF processing using Ameritron's exclusive *Dynamic ALC™*.

You get cooler operation because the AL-80B's exclusive *Instantaneous RF Bias™* completely turns off the Eimac 3-500Z tube between words. It saves hundreds of watts wasted as heat.

You get a full kilowatt PEP *output* from a whisper quiet desktop linear. It's a compact 8½"Hx14"Dx15¼"W and plugs into your nearest 120 VAC wall outlet. Covers all bands 160-15 Meters, including WARC and MARS bands (user modified for 10/12 Meters with license).

You get 850 watts *output* on CW, 500 watts *output* on RTTY, an extra heavy duty power supply, genuine Eimac 3-500Z tube, nearly 70% efficiency, tuned input, Pi/Pi-L output, inrush current protection, multi-voltage transformer, dual Cross-Needle meters, QSK compatibility, Two-Year Warranty, Made in USA, plus much more for only $1195.

***Dynamic ALC™* doubles average SSB power**

The AL-80B's exclusive *Dynamic ALC™* gives you high-level low-distortion RF processing. When activated, it can more than double your *average* SSB power and produce up to 6 dB improvement in intelligibilty. It maximizes your talk power without distortion and splatter.

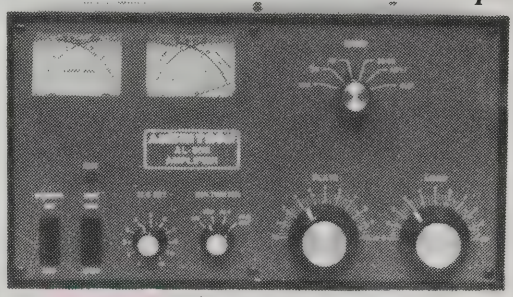
A convenient front panel control lets you adjust your output power level.

***Instantaneous RF Bias™* eliminates heat**

The AL-80B's exclusive *Instantaneous RF Bias™* completely turns off the Eimac 3-500Z tube (except filaments) between words and dots and dashes. It eliminates hundreds of watts wasted as heat to give you cooler operation and longer component life.

Gutsy Heavy-Duty Power Supply

The guts of the AL-80B is its heavy ***heavy*** duty power supply. A 26 pound transformer using a high silicone steel core, computer grade capacitors, heavy duty bleeders and ten 3 amp, 1000 V power rectifiers give you a stiff 2700 volts fully loaded. Many amplifiers using *two* 3-500Zs use such small power supplies they don't deliver much more power output than the AL-80B.



NEW! $1069 Ameritron AL-80B

***Genuine* Eimac® 3-500Z Tube**

The AL-80B uses a *genuine* Eimac® 3-500Z tube warranted by Eimac® -- not cheaper, less reliable 3-500Zs used by some competitors.

70% efficiency

The AL-80B is built on a rugged steel chassis. It has a separate RF compartment that's fully shielded to keep RF from leaking out. This keeps RFI and TVI to a minimum.

Superb RF design and layout, Hi-Q tank circuit and commercially rated RF power components give you nearly 70% plate efficiency over the entire operating range. Your power goes into your antenna instead of heating up your amplifier.

A whisper quiet internal fan draws in cool air over power supply components and pressurizes the 3-500Z tube compartment to remove heat for longest life.

***Tuned Input* lets your rig deliver full output**

A 50 ohm broadband Pi-Network *tuned input* is used. Even the fussiest solid state transmitter will deliver full power to your AL-80B.

Pi/Pi-L Output Network

A carefully designed Pi/Pi-L output network using the optimum Q for each band gives you exceptionally smooth tuning, extremely wide matching range, full band coverage and peak performance at all power levels.

Ball bearing venier reduction drives with logging scales on both the plate and load controls make tuning precise and easy. It also lets you rapidly retune to your favorite frequency.

Step-Start Inrush Protection™

Step-Start Inrush Protection™ stops damaging inrush current with a start up sequence that's *easy* on your tube and power supply components.

Multi-Voltage Power Transformer

Excessive line voltage stresses components and causes them to wear out. Low line voltage causes a "soft-tube" effect — low output and signal distortion.

Ameritron's exclusive *Multi-Voltage Power Transformer* lets you optimize for different line voltage. You can select from 14 different *primary* voltages from 90 to 140 VAC and 205 to 250 VAC.

The *high voltage secondary* can be wired to reduce plate voltage for efficient operation below 400 watts for use outside the USA.

***Dual* Illuminated Cross-Needle Meters**

Ameritron's dual illuminated cross-needle meters give you *four separate meters* to monitor your operating conditions -- you can tell right away if something is wrong.

Grid current, plate current and forward PEP output power are *continously* monitored to tell you of improper loading and abnormal conditions.

The fourth meter can be switched to monitor your 3-500Z tube DC plate voltage, reflected PEP power and the SWR of your antenna, ALC voltage to your rig and the grid current that starts ALC action -- you get a clear operating picture of your AL-80B.

QSK Compatible

The fast open frame T/R (transmit/receive) relay in the AL-80B switches nearly as fast as some vacuum relay QSK T/R switches.

For *lightning fast* QSK operation use the optional external Ameritron *electronic PIN diode* QSK-5 T/R switch or the internal QSK-5PC. Please contact Ameritron for details.

Plus more . . .

An Operate/Standby switch lets you run barefoot, but you can instantly switch to full power if you need it.

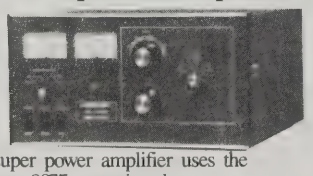
Has transmit LED; 12 VDC, 200 mA jack; 12 VDC keying relay for solid state and tube rigs; tough, nearly indestructible Lexan-over-aluminum front panel.

AMERITRON offers the best selection of legal limit linears!

These 3 rugged linears all use a super heavy duty hypersil power supply capable of 2500 watts!

Ameritron's most powerful amplifier

AL-1500
$2199

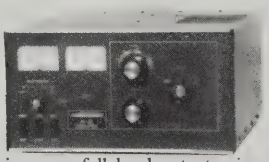


Ameritron super power amplifier uses the herculean Eimac® 8877 ceramic tube.

It's so powerful that 65 watts drive gives you full legal output—and it's just loafing because the power supply is capable of 2500 watts PEP.

Ameritron's Dual 3-500Z linear

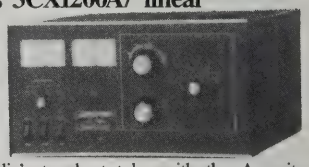
AL-82
$1679



This linear gives you full legal output using a pair of Eimac® 3-500Zs. Some competing linears using dual 3-500Zs don't give you 1500 watts because their lightweight power supplies can't use the tubes to their full potential.

Ameritron's 3CX1200A7 linear

AL-1200
$1749

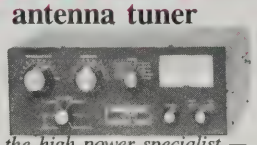


Get ham radio's toughest tube with the Ameritron AL-1200—the Eimac 3CX1200A7. It has a 50 watt control grid dissipation—12 times tougher than the 4 watt rating of the 3CX800A7—yet you get the same full legal output as you get from a *pair* of 3CX800A7s.

AMERITRON brings you the finest high power accessories!

Legal limit antenna tuner

ATR-15
$359.95



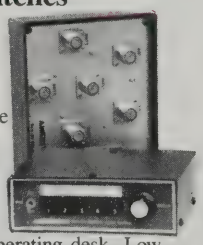
Ameritron — *the high power specialist* — brings you the ATR-15 antenna tuner that's designed for legal limit amplifiers. Heavy duty silver plated bandswitch virtually eliminates switch failure. High power transmitting capacitors. 1.8-30 MHz. Peak reading SWR/wattmeter. 6 position antenna switch. Selectable 1:1 or 4:1 balun. 5¼ x 13¼ x 13½ inches. Meter lamps uses 12 VDC.

Legal Limit Dummy Load

Oil cooled 50 ohm dummy load. Handle 500 W for 5 min. SWR under 1.2 up to 30 MHz. Low SWR to 400 MHz. 7½" H x 6⅝" D. **MFJ-205X** without oil, $29.95. **MFJ-250 with oil, $49.95.**

Remote Coax Switches

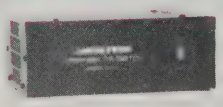
RCS-8V
$139.95



RCS-8V, DC-UHF 5 KW Coax Switch. Replace 5 coax feedlines with one with this Ameritron Coax switch. Weatherproof box mounts outdoors on your tower or mast. Attractive control unit sits on your operating desk. Low SWR to 450 MHz. Low loss. Rated at 5 KW to 30 MHz. 1 KW at 150 MHz.

RCS-4, $124.95, 4 position HF switch. Similar to RCS-8V. Requires no control cable Handles 2500 watts PEP.

RCS-4
$124.95

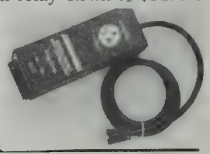


A.

A. QSK-5 Pin Diode T/R Switch Self-contained connects externally to most HF amplifiers. Handle 2.5 KW PEP, 2KW CW. Six times faster than vaccum relay 6x4x9½ **$319.95**

B. Step-Start Inrush Current Protector Stops inrush current upon power up and absorb memontary high voltage spikes to your amplifier.....**$79.95**

ICP 120 (120V) ICP-240 (240V)



B.

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AES

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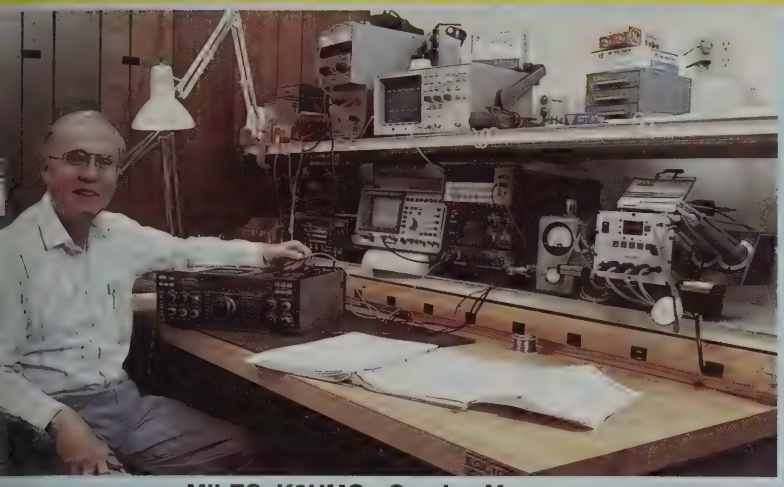
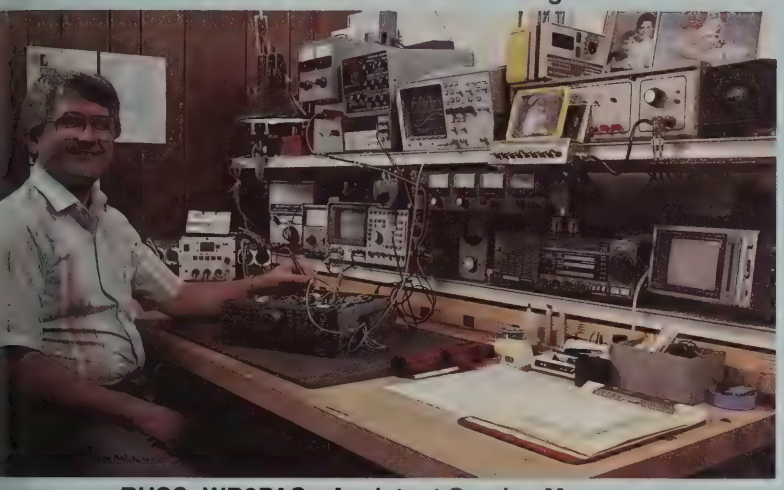
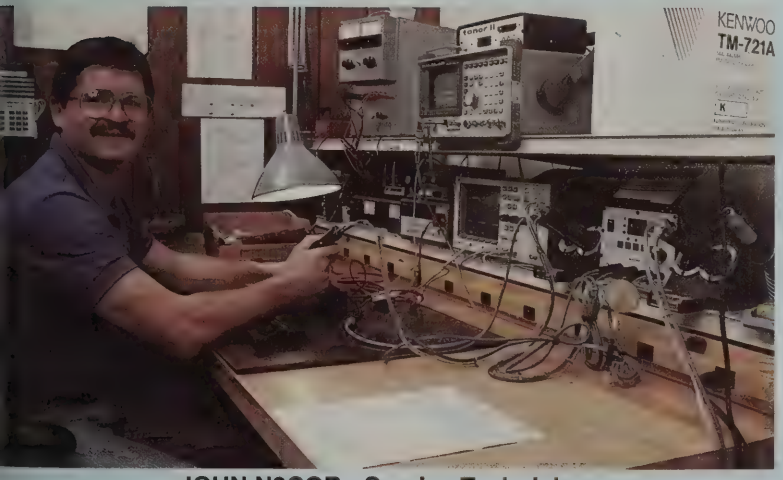
Our Service Shops . . . a Good Reason to buy from AES!



MILES K9HMQ • Service Manager



RUSS WB9PAS • Assistant Service Manager



JOHN N9COB • Service Technician

WHY BUY FROM AES? • One good reason why you should buy from **AES** is our **10 Service Technicians**, 5 of whom are shown here, hard at work at our Milwaukee Headquarters. In addition, we have John WA8PKB in the Wickliffe Ohio store, Gil K4ISK and Stuart N4IPX in Orlando, and in Las Vegas, Peter WA6EDT and Bob KG7D.

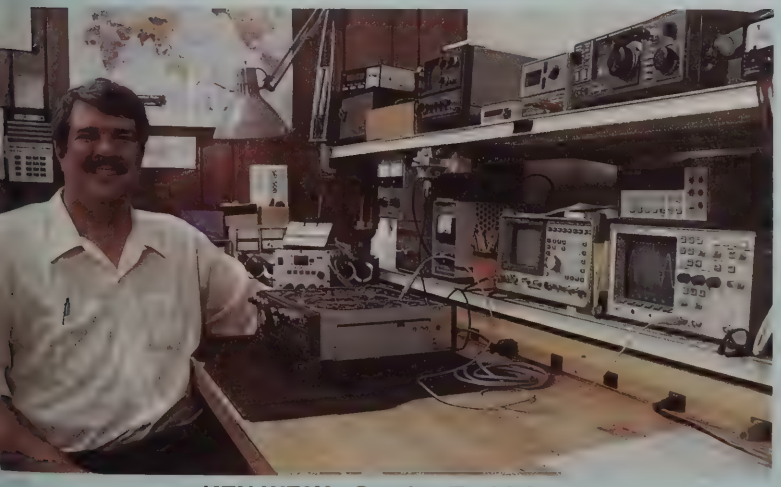
LATEST STUFF • If you paid close attention to similar pictures in our last catalog, you will notice that there has been a change in test equipment. It looks like a lot less, but it is really much more powerful! Since the last catalog, we've spent over $200,000 re-equipping our service shops with the latest state-of-the-art Hewlett Packard Test Equipment.

The new Hewlett Packard Model 8920A Test Sets that we are now using, replace many pieces of our older test equipment. It is self contained and combines **22 complete instruments** including a Spectrum Analyzer, Tracking Generator, Digital scope, Distortion and SINAD meter. It has a synthesized all mode Signal Generator (good to 1 GHz), a Frequency Counter and error meter, plus an RF power meter signaling encode and decoder for DTMF and sub-audible tones and much more! . . . It's Highly Stable, More Accurate and in most cases speeds repairs because of it's I-BASIC Computer which allows us to store custom test parameters for many pieces of equipment that we frequently service. We've also added Hewlett Packard's latest Digital Oscilloscopes and DVM's.

Each service shop is identically equipped for the convenience of all technicians, and each technician has been fully trained by Hewlett Packard in the multiple uses of each new piece of equipment.

FULL SERVICE • **AES** is a Full Service Dealer, and unlike many others, **we service what we sell**. It is our feeling that our customers should be on-the-air operating, not waiting for their equipment to be repaired at the factory. To assist you we offer two options (B & C), which may be found under Policies, Warranties and Other Information on page 144. As stated, it is important that after your purchase, you Keep your invoice copies. **Since we only service what we sell,** you will need to include a photocopy of your invoice when requesting service (in or out of warranty).

LABOR RATES • Our Labor Rate for out of Warranty Service is $48.00 per hour. Minimum charge for HF and VHF bases is $64.00. Minimum charge for VHF mobiles, handhelds and accessories is $48.00.



KEN WF9X • Service Techician

JIM WB6JNN • Service Techician

Main Store Display Area

Paul and Don in Video and Camcorder Display Area

Audio Plus

Audio Plus . .

A Division of AMATEUR ELECTRONIC SUPPLY® with three locations: the main store in Oshkosh, Wisconsin and satellite stores in Fond du Lac and Ripon, Wisconsin.

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Note: Not all Audio/Video manufacturers allow their products to be sold Mail Order. Audio Plus will adhere strictly to any policies in that regard, so call Don or Paul at Audio Plus in Oshkosh - Toll Free to discuss availability and Discounts. In some cases you may have to come into the store to make the purchase. No Dealers, end user only.

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SHIPPING INFORMATION

METHODS: Unless otherwise specified, within the continential 48 States, items up to 70 lbs, not exceeding 130" combined length & girth, will be shipped by **UNITED PARCEL SERVICE (UPS) Brown Label.** APO/FPO and U.S. possessions, items up to 70 lbs, not exceeding 108" combined length & girth will be shipped by **AIR PARCEL POST.** Please include a sufficient amount for both UPS and AIR PARCEL POST Shipping Charges and Insurance, excess amount will be promptly refunded.

Items exceeding UPS limits will be shipped via **TRUCK**, or for faster service, via **AIR FREIGHT.** Maximum insurance on truck is only about $5.00 per pound, therefore, items considered too valuable for truck will be shipped via **AIR FREIGHT.** Do not remit in advance for truck or air freight charges, they will be collected upon delivery by the carrier.

TRADE-INS: Pack well and ship by UPS, Prepaid and Fully Insured. For heavier or larger items use TRUCK or AIR FREIGHT. Ship PREPAID and FULLY INSURED. Inquire about FULL insurance and documentation before releasing your shipment. Avoid Bus or Parcel Post. AES assumes no responsibility for damage in transit or filing claims.

SPECIAL INSTRUCTIONS:

ACCOUNT NO. _____ **DATE** _____

Name _____ **Call** _____

Address _____

City & State _____ **Zip Code** _____

You may telephone me at: (Be sure to show area code)

Home # _____ **Hours:** _____

Work # _____ **Hours:** _____

SHIP TO: (if other than at left)

_____

_____

_____

IF YOU HAVE MOVED since your last order, please show your old address below:

_____

_____

QTY.	DO NOT USE	MANUFACTURER — PART OR MODEL # — DESCRIPTION	PRICE EACH	TOTAL

FINAL BALANCE DUE (line 10) to be paid by:

☐ **CASH:** For your own protection DO NOT mail currency. Send BANK CHECK or MONEY ORDER. PERSONAL CHECK may delay shipping until it clears our bank. Please attach remittance firmly to top of order blank.

☐ **COD:** 20% CASH deposit required with order. BALANCE DUE plus SHIPPING CHARGES and COD FEE will be collected in CASH upon delivery.

☐ MasterCard ☐ VISA ☐ Discover ☐ Am. Express/Optima

Account # _____

Valid date (Am. Express only) _____ Exp. date _____

Signature _____ Date _____

If you have a TRADE-IN - Check one of the following:

☐ Payment-in-full enclosed. Refund the allowance after my Trade-in is received and approved.

☐ Charge the **TOTAL AMOUNT** of new merchandise on my Charge Card. Issue credit to my Card when Trade-in is received and approved.

☐ Hold order until you receive and approve my Trade-in.

For orders being shipped by UPS or AIR PARCEL POST, please include a sufficient amount for Shipping charges and Insurance. If the amount for merchandise is less than remitted you may expect a prompt refund. DO NOT remit for TRUCK or AIR FREIGHT shipping charges, they will be collected by the carrier upon delivery.

LINE 1 — **Total amount of order**	$
LINE 2 — Subtract here AES Refund Checks, Gift Certificates, Discount or Special Allowances (if any)	–
LINE 3 Subtract TRADE-IN Allowance (if any) ..... Enclose mail quotation or reference telephone quote and list Trade-in items below. _____ _____ **IMPORTANT! Persons having a Trade-in must Check one of the boxes at the lower left of this order blank.**	–
LINE 4 — **Balance**	$
LINE 5 — Sales Tax (Wisconsin residents, 5½%)★....	$
LINE 6 — Estimated UPS or Postage Charges & ins	+
LINE 7 — Due AES from previous order order (if any) ...	+
LINE 8 — **Total Amount Due**.....	$
LINE 9 — **Amount Enclosed**	–
LINE 10 — **Final Balance Due** (if any)	$

★ Because of our Branch Store locations, we are required to collect the following Sale Tax on shipments to Florida (6%), Ohio (5.75%) & Nevada (7%) Transportation charges are taxable in Wisconsin and Florida.

Cut along dotted line or make Photocopy

AVAILABLE NOW!

- Accessory Catalog
- DJ-F1T Cassette Tape Instruction Manual by Gordon West, (WB6NOA)

New ALINCO DR-599T 2m/70cm Mobile

Here's a 2m/40cm Twin Band FM mobile that goes where no radio has gone before. **2m coverage** is 144-148MHz (tx) and 130-174MHz (rx), and with simple modification - 118-136MHz, which includes the aircraft band. **70cm coverage** is 440-450MHz (tx/rx) and 400-520MHz (rx). Includes 28 memories, 4 scan modes and priority. Power: 45W (2m), 35W (440) with 3 selectable power levels. This is truly the most advanced twin-bander available today. Hi-tech features and ergonomic design put the DR-599T in a league of its own. From the Remote control microphone to the contoured fingertip buttons, the DR-599T looks and feels like a smooth operator. Space limitations are not a problem for the DR-599T size is only 5⅞"w x 2"h x 6⅞"d and it weighs only 3.7 lbs. With the optional separation kit, the control head is detachable which allows the transceiver body to be remotely mounted and the sleek control head mounted on the dash, visor or other convenient location. With the optional EJ-8U DTMF Decoder board installed, the DR-599T can be remotely operated from another transceiver. Full duplex cross band operation and cross band repeater functions, selectable step tuning. Standard features include; ARM; ABX; Bell; Reverse; Mute; CTCSS encode. 13.8V DC @ 10A.

Two Year Limited Warranty!

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5

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JIM WB9LSR
DICK KE9QU
EMIL N9FBF
MIKE N9LBQ
JOHN AB9G
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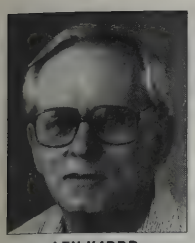
STEVE
ANTONE
CARLENE
ANGELA
ANDREW
MILES K9HMQ
RUSS WB9PAS
JOHN N9COB
JIM WB6JNN
KEN WF9X
BILL KAØSEP- Pilot
JEFF-Pilot
KIMMO-Pilot
BARBARA KB9HFM
CAROL
ARLENE
PEGGY WB9RWV
KATHY
KATHY N9OHU
MARY
ANITA
KAREN
JOYCE
JACK N9QLG
TED W9NHE
JOHN
JIM
BERNIE
◀ Milwaukee Wisconsin
Wickliffe Ohio ▶
DAVE WB8BAG
ED N8FIN
PHIL WD8AAN
BOB WB8WEN
BEN AA8AH
SAM N8UZN
BILL
JOHN WA8PKB
NANCY
◀ Wickliffe Ohio
Orlando Florida ▶
GRANT K4IQW
JIM N4LIO
STUART N4IPX
BRUCE WD4HIM
RICK
NATHAN KN4BJ
RODNEY KD4TVY
EDDIE KD4RAZ
GIL K4ISK
CHARITY


LEN K4BDP

BILL WA9RDA

DON KA2KDP

VICTOR N4COU

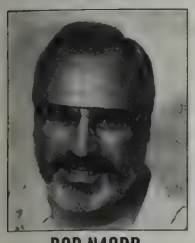
◀ Clearwater Florida

Las Vegas ▶ Nevada

SQUEAK AD7K

TOM N7GBJ

RICHARD KG7QK


BOB N4QDB

HAROLD N5ANO

BOBBY N7XE

BOB KG7D

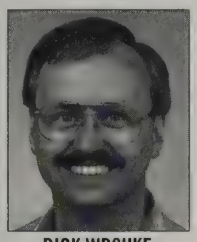
PETER WA6EDT

MARK KB7OMC

JOHN

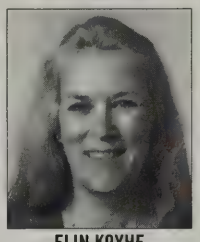
◀ Las Vegas Nevada

more Milwaukee ▶ Wisconsin


RICK WB9HKE
RF Consultant

VIRGIL WB9DLT
Computer Consultant

CHRISTINA


ELIN K9YHE

TERRY W9DIA

YOUNG TERRY

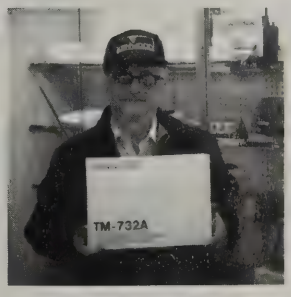
Some AES Open House Prize Winners . . .

KENWOOD'S Wayne Yoshida presents KENWOOD TH-28A to Eric Bartholomew KB8EVA at AES-KENWOOD Open House.

Wayne Yoshida presents prize to Lawrence Kominek KA8QOQ at Wickliffe AES- KENWOOD Open House.

Winner Judith Simpson N9NSI accepting ICOM IC-W2A from Dale N9BRX at Milwaukee AES-ICOM Open House.

Winner Donald Kuether W9TVY accepting ICOM IC-P4AT from Dale N9BRX at Milwaukee AES-ICOM Open House.



William DePetris K8QZU
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Used Amateur Radio Equipment List

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Note: This list of used Ham Equipment reflects what was in our inventory when this catalog was printed. The AES organization trades, buys and sells a tremendou amount of used equipment each week, so this is only a representation of what may be available at any given time. Each store receives a weekly update of invento changes by location. Visit Branch Stores or **Phone the Milwaukee Headquarters for a verbal update**. The letters after the price indicate which location had th particular item at the time of inventory: **m** = Milwaukee; **w** = Wickliffe; **f** = Orlando; **c** = Clearwater; **v** = Las Vegas.

AEA
AT-300 Ant tuner $139 c
ET-1 Ant tuner 99 w
ALINCO
DJ-160T 2m HT $199 w
DJ-460T 440 HT 199 w
AMECO
PLF-2 Preamp $49 c
AMERITRON
AL-80A HF amp $749 wcv
AL-811 HF amp 479 f
AL-82 HF amp 1349 wc
ATR-15 Ant tuner 269 c
B&W
334A Dummy load $169 m
AT-200 2m tuner 29 m
BIRD
100H Element $49 w
25B Element 39 w
4030 FS element 79 w
4273-100 Sampler 79 m
4275-100 Sampler 79 m
4431 Wattmeter 299 m
50H Element 49 w
8164 Dummy load 169 w
CES
SDI-50 Autopatch $399 m
CLEAR CHANNEL
AR-3500/30w 10m $189 w
DAIWA
CS-401 Coax sw $59 m
DENTRON
160-10AT Ant tuner $99 w
DRAKE
7077 Desk mic $39 v
MS-7 Speaker 29 v
PS-7 Power supply 149 wcv
PS-7 w/fan 159 w
R-7 Receiver 699 w
R-7A Receiver 799 w
RV-7 Remote VFO 99 v
SP-75 Speech proc $79 v
TR-7/fan/filter/NB 529 m
TR-7/fan/2 filts/NB 559 w
TR-7A Xcvr 699 c
ETO
374A Amplifier $1695 v
GRUNDIG
Satellit 500 Rcvr $319 m
Satellit 650 Rcvr 679 mw
Yacht Boy 210 Rcvr 49 w
Yacht Boy 230 Rcvr 139 w
ICOM
AG-1 2m preamp $29 c
AH-2A Auto tuner 369 mc
AH-3 Auto tuner 299 f
AT-100 Ant. tuner 289 f
AT-150 Ant. tuner 299 mw
AT-500 Ant. tuner 399 mc
BC-50 Desk charger 25 w
BC-72 Desk charger 79 w
CT-16 Sat interface 69 m
HP-2 Headphones 29 w
IC-04AT 440 HT 279 w
IC-12AT 1.2GHz HT 259 w
IC-12GAT 1.2 GHz HT 329 w
IC-2KL HF amplifier 1359 mwfc
IC-2SAT 2m HT 239 w
IC-2SRA/batt/spmic 399 w
IC-4AT 440 HT 199 w
IC-4GAT 440 HT 269 w
IC-4SAT 440 HT 269 w
IC-48A 440 Xcvr 319 v
IC-271A/ps/preamp 619 w
IC-275H 2m Xcvr 969 w
IC-449A 440 Xcvr 329 w
IC-451A 430 Xcvr 469 w
IC-471A 440 xcvr 599 m
IC-551D 6m Xcvr 399 m
IC-575A 6m Xcvr 899 w
IC-720A Xcvr 529 v
IC-730 Xcvr 489 wc
IC-735 HF xcvr 719 mf
IC-745 Xcvr 589 w
IC-745/filts/kyr/FM 729 m
IC-745/filts/mark/FM 729 w
IC-751/3 filt/CR-64 1039 m
IC-751A Xcvr 959 c
IC-761 Xcvr 1399 mwcv
IC-765 Xcvr 1839 wf
IC-900 Control only 129 w
IC-900/UX-29A/39A 629 f
IC-900/UX-29A/49A 629 wc
IC-900/2m/49/UT29 659 w
IC-W2A 2m/440 HT 399 w
M-8 Marine HT. 179 w
PP-1 Phone patch 129 mf
PS-15 Power supply 119 c
PS-20 Power supply 139 v
PS-30 Power supply 249 fc
PS-55 Power supply 159 mc
R-1 Handheld Rcvr 359 w
R-100 Mobile Rcvr 479 v
R-70 Receiver 389 mwv
R-7000 Receiver 829 wf
R-7000/voice/remote 899 w
R-71A Receiver 689 mwc
R-71A w/DC kit 699 wv
R-71A/FL-32A 719 w
R-71A/FL-44A 759 m
R-71A/DC/filt/rem 769 v
R-71A/FM/CR-64 769 m
R-71A/ssb/fm/rem 869 w
R-72 Rcvr w/FM 769 f
SM-5 Desk mic 25 w
SM-6 Desk mic 25 w
SM-8 Desk mic 59 w
SM-10 Desk mic 99 f
SP-3 speaker 49 wc
SP-20 Spkr/filter 99 f
TV-R7000 ATV unit 89 f
V-100 VHF mobile 499 m
JRC
NRD-525 Receiver $699 f
KANTRONICS
KT-110 10m Xcvr $199 m
KENWOOD
AT-200 Ant tuner $99 w
AT-230 Ant tuner 149 w
AT-940 Auto tuner 99 m
BC-7 Desk charger 75 w
BC-10 Desk charger 25 w
DFC-230 Dig freq ctl 119 m
MC-50 Desk mic 49 mwcv
MC-60A Desk mic 99 wfc
PC-1A Phone patch 89 mf
PS-30 Power supply 119 m
PS-430 Power supply 149 c
PS-50 Power supply 169 mwf
R-1000 Receiver 269 mc
R-2000 Receiver 499 f
R-2000/VC-10 conv 559 m
R-5000 Receiver 699 wcv
R-5000/VC-20/IC-10 889 w
RC-10 Rem handset 169 wf
RZ-1 Mobile Rcvr 399 wc
SM-220/BS-8 Scope 319 w
SMC-30 Spkr/mic 29 w
SP-41 Speaker 25 w
SP-430 Speaker 49 c
SP-520 Speaker 29 w
SP-820 Speaker 49 c
ST-2 Desk charger 65 m
SW-2100 SWR/power 79 f
TH-45AT 440 HT 209 w
TH-215A 2m HT 249 w
TH-225A 2m HT 279 w
TL-922A Amplifier 1349 wfcv
TM-231A 2m Xcvr 299 wc
TM-331A 220 Xcvr 319 w
TM-721A 2m/440 479 w
TM-941A 2m/440/1.2 799 f
TM-2530A 2m Xcvr 289 c
TM-2550A 2m Xcvr 349 c
TM-2570A 2m Xcvr 399 w
TM-3530A 220 Xcvr 299 w
TR-851A 430 Xcvr 539 v
TR-7950 2m Xcvr 269 c
TR-9000 2m Xcvr 289 w
TS-130S Xcvr 449 c
TS-140S/filt/IF-10C 749 m
TS-180S/DFC Xcvr 429 m
TS-430S Xcvr 549 c
TS-440S Xcvr 849 f
TS-440S/ssb/cw filts 899 c
TS-440S/AT Xcvr 939 mfcv
TS-440S/AT/cw filter 969 wf
TS-440S/AT/filt/voice 999 w
TS-440S/AT/2 filters 999 m
TS-520 Xcvr 389 c
TS-520/CW filter 419 w
TS-520S Xcvr 399 m
TS-520SE Xcvr 399 f
TS-530S Xcvr 509 mw
TS-530S/CW filter 539 w
TS-530SP Xcvr 629 fcv
TS-660S 15/12/10/6 469 v
TS-711A 2m Xcvr 699 mc
TS-811A 430/TU-5 869 c
TS-820S Xcvr 449 wc
TS-820S/CW filter 479 w
TS-830S Xcvr 669 mwfc
TS-830S/2 cw filters 759 f
TS-930S Xcvr 899 m
TS-930S/AT Xcvr 999 w
TS-940S/2 cw filts 1419 v
TS-940S/AT Xcvr 1469 mwfcv
TS-940S/AT/cw filt 1499 v
TS-940S/AT/vs1/am 1529 c
TS-940S/AT/2 cw 1579 m
TS-940S/AT/2cw/vs 1639 v
TS-950S Xcvr 1999 m
TS-950SD Xcvr 2399 mw
TS-950SD/ssb filter 2449 m
VC-10 VHF converter 59 c
VFO-240 Remote VFO 129 c
VFO-520 Remote VFO 89 w
VFO-820 Remote VFO 89 c
MFJ
202B Noise bridge $39 v
422B Keyer 59 f
921 2m/220 tuner 49 w
931 Artificial ground 49 fc
NEWTON
GSB-2000 Sat test $399 w
NYE
MB-V Ant tuner $299 w
PALOMAR
PF-300 Audio filter $99 m
PT-340 Tuner-Tuner 69 w
PANASONIC
RF-B65 Receiver $199 wv
RF-B600 Receiver 359 w
SANGEAN
ATS-803 Receiver $149 w
ATS-808 Receiver 149 mv
SONY
AN-1 Out active ant $99 m
ICF-2002 Receiver 159 mw
ICF-2003 Receiver 169 c
ICF-2010 Receiver 289 c
ICF-SW55 Receiver 299 mw
ICF-SW7600 Rcvr 179 m
PRO-80 Scan Rcvr 299 w
STANDARD
C-468A 440 HT $279 w
STARTEK
3500 Freq counter $179 v
TEN-TEC
242 Remote VFO $99 m
262G Power supply 79 mw
288 SSB filter 39 w
301 Remote tuning 69 m
405 Amplifier 149 m
444 Amplifier/ps 899 wfc
535 Argonaut II Xcvr 899 m
540 Triton Xcvr 349 m
544 Triton IV Xcvr 399 w
560 Corsair Xcvr 599 c
561 Corsair II Xcvr 899 wfv
561/cw filter/kyr 959 m
562/1.8 KHz filter 1419 f
562/cw/ssb filters 1449 f
562/2 filters 1459 v
562/3 filters 1579 mw
562/4 filters/FM 1699 c
570 Century 21 189 m
579/226/1179 299 m
585 Paragon Xcvr 1399 mwc
645 Keyer 49 m
705 Desk mic 49 mw
936 Power supply 129 m
960 Power supply 159 mwc
961 Power supply 169 wv
979 Power supply 69 m
KR-50 Keyer 99 f
UNIDEN
BC-70XLT Scanner $129 m
HR-2510 10m Xcvr 189 w
HR-2600 10m xcvr 179 f
VIBROPLEX
EK-1 Keyer/paddle $69 w
YAESU
2M/767 2m module $149 w
FC-102 Ant tuner 169 w
FC-757AT Auto tuner 249 mcv
FIF-232C Interface 49 m
FL-7000 Amplifier 1559 wc
FP-757HD Power sply 219 m
FRG-7000 Receiver 229 m
FRG-8800 Receiver 549 mf
FRG-9600 VHF Rcvr 439 c
FRV-8800 VHF conv 79 m
FT-23R 2m HT 169 w
FT-77/FM Xcvr 429 m
FT-101B Xcvr 389 w
FT-101E Xcvr 399 c
FT-101E/CW filter 429 m
FT-101Z Xcvr 449 w
FT-102 Xcvr 599 mwc
FT-127RA 220 Xcvr 99 w
FT-411E 2m HT 229 w
FT-470 2m/440 HT 299 w
FT-727R 2m/440 HT 229 w
FT-727R/FNB-4A 229 w
FT-730R 440 Xcvr 269 v
FT-757GX Xcvr 669 mv
FT-757GX Mk II Xcvr 719 f
FT-767GX Xcvr 1349 mfc
FT-767GX/2m 1479 mcv
FT-767GX/6m 1479 m
FT-767GX/2/6/440 1799 m
FT-2400H 2m Xcvr 289 w
FT-2700RH 2m/440 349 v
FT-902DM Xcvr 669 w
FTV-107R 2m Xvtr 189 w
FTV-901 Xvtr/2/6/430 399 w
FV-101DM Dig VFO 99 m
FV-101Z Remote VFO 99 f
FV-102DM Dig VFO 199 w
FV-700DM Rem VFO 89 m
FV-707DM Rem VFO 89 mw
MD-1C8 Desk mic 89 m
SP-6 Speaker 99 m
SP-101B Speaker 24 f
SP-101PB Spkr/patch 49 f
SP-767 Speaker 69 f
SP-901P Spkr/patch 49 w
TV-736 ATV conv 119 m
YD-148 Desk mic 24 mf
YO-101 Scope 169 f

USED TEST EQUIPMENT
Call for more information

B & K
1590 100MHz scope $599 mf
1590A 100MHz scope 799 f
2834 4½-dig meter 149 m
BIRD
612 80w VHF meter $49 m
CUSHMAN
CE-50A-1 Svc mon $2399 f
FLUKE
8000A Digital meter $49 m
8000A w/battery 59 m
8000A w/peak 59 m
GAW
1410 Distort/Sinad $89 m
HEWLETT-PACKARD
410B VTVM $29 m
410C VTVM 89 m
1220A Scope 299 f
1741A Storage scope 749 m
IFR
FM/AM-1000S svc mon 1998 m
FM/AM-1200 svc mon 4998 f
FM/AM-1200S svc mon 6998 f
SINGER
FM-10CS Early model $499 m
FM-10CS Sig gen/mon 599 m
FM-10CS/tone gen/AM 699 m
BBA-1 Brdband amp 29 m
OAM-2 AM module 69 m
RFM-10B RF module 59 m
WATERS
334A Dummy/wattmtr $79 m
374 Dummy/wattmtr 79 m

This Used Equipment list and the New Equipment list on the next page were prepared from an actual inventory taken on 11/4/92. Availability and Prices are subject to change without notice. AES not responsible for typographical errors.

Phone our Milwaukee Headquarters for weekly verbal updates.

Special Prices on New Equipment Open Cartons and Demos

The following is a list of brand New Equipment that has been demonstrated, on display or restocked. The cartons are no longer factory sealed, but each piece has been checked out in our service department and carries a 100% New Warranty The letters after the price is the location at the time of inventory **m** = Milwaukee; **w** = Wickliffe; **f** = Orlando; **c** = Clearwater; **v** = Las Vegas. Limited quantities – Order Now! **Used equipment policies do not apply.**

	Sale	Special
AEA		
FSTV-430A 430 FSTV Xcvr	$399.95	**$379.95** w
ACE SYSTEMS		
Opto electronic keyer	$ 39.95	**$ 35.95** m
ALINCO		
DJ-160T 2m FM HT	$249.95	**$219.95** m
DJ-560T/A 2m/440 FM HT	329.95	**299.95** mf
DJ-580T 2m/440 FM HT	389.95	**359.95** w
DR-590T 45w/35w 2m/440 FM xcvr	499.95	**449.95** mfv
DR-590T/EJ-8U DTMF squelch unit	543.90	**489.95** m
DR-1200T 2m FM data radio	249.95	**224.95** v
AMERITRON		
ATR-15 1.5kw PEP antenna tuner	$359.95	**$319.95** mf
AL-811 600w PEP HF amplifier	589.95	**529.95** m
ASTRON		
RS-10A 7.5A power supply	$ 69.95	**$62.95** m
B&K		
2911 Multimeter	$ 76.95	**$69.95** m
B&W		
VS-300A 300w 160-10m ant tuner	$ 99.95	**$ 89.95** m
CES		
SDI-50 Autopatch/repeater control	$489.95	**$439.95** m
COBRA		
AN-8515 Answering machine	$ 44.95	**$29.95** m
CP-468 Cordless phone	59.95	**49.95** m
CP-471 Cordless phone	49.95	**39.95** m
PP-110 FAX machine	599.95	**549.95** m
ST-622 Wired phone	29.95	**19.95** m
CONNECT SYSTEMS		
CS-800 Duplex patch/rptr controller	$319.95	**$289.95** v
CUSHCRAFT		
PS-4 Remote polarity switch	$109.95	**$ 99.95** m
DAIWA		
NS-663BN 140-525MHz wattmeter	$ 99.95	**$ 89.95** m
DIGIMAX		
D-500 512 MHz counter	$139.95	**$124.95** m
D-1200 1.2GHz counter	269.95	**239.95** m
GROTHE		
VS-4 Vehicle siren w/spkr	$139.95	**$124.95** m
GRUNDIG		
Satellite 500 SW receiver	$399.95	**$359.95** m
Yacht Boy 215 SW receiver	89.95	**79.95** w
ICOM		
AD-15A Power supply for Rcvr	$ 41.25	**$ 34.95** m
AH-2A Antenna. tuning system	519.95	**466.95** m
AH-3 Auto antenna tuner	449.95	**389.95** m
AT-150 100w auto antenna tuner	399.95	**359.95** m
AT-500 500w auto antenna tuner	529.95	**479.95** m
BC-50 Desk cgr for IC-u2AT	35.00	**32.95** w
C-2AT 2m FM HT	219.95	**199.95** v
C-2SRA 2m FM HT/25-905 MHz Rcvr	479.95	**454.95** w
C-125/SS-32 5ch, 25w VHF land mob	428.90	**389.95** m

ICOM - continued	Sale	Special
IC-449A 35w 440MHz xcvr	$439.95	**$399.95** m
IC-735 Xcvr w/SW Rcvr	949.95	**889.95** mc
IC-751A Xcvr w/SW Rcvr	1348	**1279** f
IC-751A/CR-64/EX-310/UT-30	1512.25	**1399** m
IC-781 Xcvr w/spectrum scope	5298	**4999** f
IC-2400A 2m/440 FM Xcvr	699.95	**629.95** w
IC-2410AB 25w 2m/440 FM Xcvr	729.95	**679.95** m
IC-H16 16 ch, 3w VHF keyboard HT	549.95	**499.95** m
IC-H18 16 ch, 5w VHF HT	499.95	**449.95** m
IC-U12/460MHz land mobile HT	299.95	**269.95** m
PS-15 Power supply	189.95	**169.95** m
PS-55 Power supply	219.95	**199.95** m
R-1 100kHz-1300MHz handheld Rcvr	449.95	**409.95** m
R-71A 100kHz-30MHz Rcvr	989.95	**889.95** m
RP-1220 1.2 GHz repeater	2298	**2199** m
RP-4020/50w 440 repeater	2198	**2099** m
M-5 5w VHF marine HT	399.95	**359.95** m
UX-39A 220 MHz unit for IC-901	399.95	**359.95** m
KANTRONICS		
D4-10 440 MHz data radio	$349.95	**314.95** m
PC Combo Software	49.95	**39.95** m
KENWOOD		
AT-300 Antenna tuner	$529.95	**$479.95** m
AT-940 Auto antenna tuner	189.95	**179.95** w
CD-10 Call sign display	49.95	**44.95** m
MC-50 4-pin desk microphone	77.95	**69.95** m
PS-53 Power supply	219.95	**199.95** mc
RZ-1 .5-905 MHz AM/FM 12v Rcvr	499.95	**449.95** fv
SM-230 Station monitor w/pan	899.95	**849.95** m
SW-2100 HF SWR/wattmeter	139.95	**124.95** m
TH-28A 2m FM HT	319.95	**299.95** v
TH-47A 1.5w 440 HT	299.95	**269.95** m
TH-78A 2m/440 FM HT	519.95	**469.95** v
TL-922A 2kw PEP linear (air freight)	1698	**1529** v
TM-541A 1.2 GHz FM Xcvr	499.95	**449.95** v
TM-732A 2m/440 FM Xcvr	649.95	**599.95** v
TM-741A 2m/440 FM Xcvr	699.95	**669.95** f
TR-851A 430-440 MHz SSB/FM Xcvr	679.95	**629.95** m
TS-450S Xcvr w/SW Rcvr	1078	**1019** fc
TS-850S/AT 9 band xcvr/tuner	1698	**1599** f
TS-950SD Deluxe 9 band transceiver	2998	**2698** fv
MFJ		
77 Remote for keyer	$ 19.95	**$ 16.95** m
486 Super Grandmaster mem keyer	169.95	**149.95** m
989C 3KW antenna tuner	299.95	**279.95** f
1020A Indoor active rcv antenna	79.95	**72.95** v
MIRAGE		
C-106G 220 10/60w amp	$189.95	**$169.95** mv
D-15N 440 2/18w amp	169.95	**149.95** m
NYE		
MBV-A 3kw tuner/switch/meters	$699.95	**$649.95** m

RANGER	Sale	Special
RCI-1000 1w 150 MHz HT	$129.95	**$116.95** m
SANGEAN		
ATS-803A SW receiver	$189.95	**$169.95** mw
ATS-808 SW receiver	189.95	**169.95** m
SONY		
ICF-7601 SW receiver	$119.95	**$109.95** m
ICF-7700 SW receiver	169.95	**149.95** m
ICF-SW1S SW receiver	299.95	**269.95** m
STANDARD		
C-528A 2m/440 FM HT	$429.95	**$389.95** m
STARTEK		
3500 3500 MHz freq counter	$229.95	**$199.95** m
TEN-TEC		
562 Xcvr	$1795	**$1698** m
425 Amplifier (RF deck only, w/tubes)		**1499** v
UNIDEN		
BC-70XLT Hand-held scanner	$159.95	**129.95** m
BC-100XLT Hand-held scanner	179.95	**159.95** m
BC-200XLT Hand-held scanner	259.95	**234.95** v
BC-560XLT Scanner	119.95	**99.95** m
BC-800XLT Scanner	249.95	**229.95** v
BP-200 Battery for BC-200XLT	32.82	**29.95** m
VIBROPLEX		
Original deluxe bug	$120.00	**$ 99.95** v
YAESU		
FAS-1-4R Remote antenna selector	$109.95	**$99.95** m
FL-7000 Linear amplifier	1979	**1879** f
FT-26/25 2w 2m FM HT	249.95	**224.95** f
FT-33R 220 FM HT	279.95	**259.95** m
FT-411E 2m FM HT	299.95	**279.95** m
FT-470 2m/440 FM HT	389.95	**369.95** m
FT-747GX Xcvr w/SW Rcvr	729.95	**699.95** w
FT-757GX Mk II Xcvr	899.95	**849.95** c
FT-890 Xcvr w/SW Rcvr	1089	**1039** v
FT-990 Xcvr w/ps/tuner	1898	**1798** fc
FT-5200 2m/440 FM Xcvr	639.95	**599.95** w
FT-5200/FTS-22 decode unit	693.95	**619.95** v
NC-29 Desk quick charger	65.00	**59.95** f

We Service ONLY what we Sell . . .
unless our service shops are 100% caught up.

Our Labor Rate for out of Warranty Service is $48.00 per hour. Minimum charge for HF, and VHF Bases is $64.00. Minimum charge for VHF Mobiles, Handhelds & Accessories is $48.00. **Service Phone: 1-414-358-0333**

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w= **Wickliffe, OH** 44092; 28940 Euclid Avenue	(216) 585-7388	1-800-321-3594	(216) 585-1024
f= **Orlando, FL** 32803; 621 Commonwealth Avenue	(407) 894-3238	1-800-327-1917	(407) 894-7553
c= **Clearwater, FL** 34625; 1898 Drew Street	(813) 461-4267		(813) 443-7893
v= **Las Vegas, NV** 89106; 1072 N. Rancho Drive	(702) 647-3114	1-800-634-6227	(702) 647-3412

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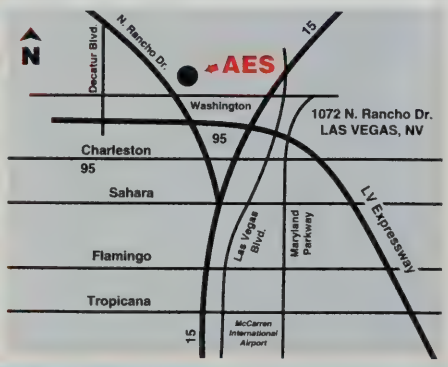

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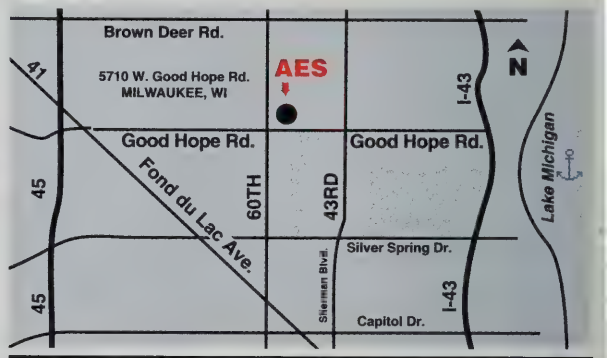
This entire building which has over 50,000 sq. ft. of space contains the **AES®** Main Corporate offices and Computer Center. Included are the Mail Order, Advertising and Service Departments. The large showroom and sales area features an extensive display of the latest Ham Equipment and other electronic goodies, and there's plenty of parking for customers. This structure was specifically designed to function as an efficient Mail Order operation with a huge warehouse that provides plenty of space for large inventories. For our customers this means fewer backorders and delays in filling orders. In fact, we can usually give *same day* service on most Mail or Telephone orders.



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1072 N. Rancho Drive 89106 *FAX*
(702) 647-3114 • (800) 634-6227 • (702) 647-3412

***Hours* • Mon-Fri 9-5:30; Sat 9-3**

Manufacturer Phone Numbers & Warranty Info.

Advanced Electronic Applications, Inc
2006 196th Place SW Units O & P
Lynnwood, WA 98036
Service/Tech Suppport: 206-775-7373
Sales: 206-774-5554
Upgrade Hot Line: 206-774-1722
Literature Request Line: 800-432-8873
FAX: 206-775-2340
Limited Warranty: One year against defects in materials and workmanship.

ALINCO
438 Amapola Avenue, #130
Torrance, CA 90501
Customer Service: 310-618-8616
FAX: 310-618-8758
Limited Warranty: *Current models* • 2 years. Parts and labor for the first 6 months, flat $38 fee for the next 18 months. *New models* • One year parts and Service. Service Contract available.

AMERITRON
Mail: 921 Louisville Road
Starkville, MS 39759
UPS: 116 Willow Road
Starkville, MS 39759
Telephone: 601-323-8211
FAX: 601-323-6551
Technical Support: 800-647-8324
Limited Warranty: One year on all Ameritron products except two years on AL-80B. All tubes are guaranteed by the respective tube manufacturers.

CUSHCRAFT Corporation
P.O. Box 4680
Manchester, NH 03108
Shipping:
48 Perimeter Road
Manchester, NH 03103
Telephone: 603-627-7877
FAX: 603-627-1764
Limited Warranty: One year from date of purchase against defects in material and workmanship.

HUSTLER
One Newtronics Place
Mineral Wells, TX 76067
Customer Service: 817-325-1409
FAX: 817-328-1386
Limited Warranty: One year

KANTRONICS, Inc.
1202 E. 23rd St.
Lawrence, KS 66046
Order/Product Info: 913-842-7745
Service/Tech Suppport: 913-842-4476
Hours: 9 am-12 noon & 2 pm-5 pm, Mon-Fri
BBS support: 913-842-4476
24 hours (1200-14,400 v.32 bis 8 bits no parity)
FAX: 913-842-2021
Limited Warranty: One year parts and labor on all products.

ICOM AMERICA, Inc.
Corporate Headquarters
2380 116th Avenue NE
Bellevue, WA 98004
Telephone: 206-454-8155
Customer Service Hotline: 206-454-7619
Parts Department: 206-454-8155
Brochure Hotline: 800-999-9877 (msg)
FAX: 206-454-1509
Regional Customer Service Centers
18102 Sky Park South., Suite 52-B
Irvine, CA 92714
Telephone: 714-852-8716
1777 Phoenix Parkway, Suite 201
Atlanta, GA 30349
Telephone: 404-991-6166
3071 #5 Road, Unit 9
Richmond, British Columbia
Canada V6X 2T4
Telephone: 604-273-7400
Limited Warranty: One year parts and labor on all products.

KENWOOD U.S.A Corporation
For UPS:
2201 E. Dominguez St.
Long Beach, CA 90810
For Mail Only:
P.O. Box 22745
Long Beach, CA 90801-5745
Sales: 310-639-4200
FAX: 310-604-4487
Technical Assistance: 310-639-7140
FAX: 310-609-2127
Parts:
East Coast: 800-637-0338
FAX: 516-483-5904
West Coast: 800-421-5080
California: 800-262-1312
FAX: 310-538-4919
Limited Warranty: One year on parts and labor on all receivers, transceivers, acc.

MFJ Enterprises, Inc.
Mail: P.O. Box 494
Mississippi State, MS 39762
UPS: 921 Louisville Road
Starkville, MS 39759
Telephone: 601-323-5869
FAX: 601-323-6551
Technical Support: 800-647-8324
Limited Warranty: One year "No Matter What" Unconditional Warranty from DOP.

COMET (NGC)
1275 N. Grove St • Anaheim CA 92069
Customer Service: 800-962-2611
FAX: 714-630-7024
Limited Warranty: 90 days

RF PARTS (Diamond Antennas)
1320 Grand Ave. • San Marcos, CA 92069
Customer Service: 619-744-0750
FAX: 619-744-1943
Limited Warranty: 90 days, call for RA#

JRC.
430 Park Avenue
New York, NY 10022
Cerritos, CA 90701
Customer Service: 212-355-1180
FAX: 212-319-5227
Limited Warranty: One Year

MIRAGE/KLM
For UPS:
16890 Church Street, Bldg. 14
Morgan Hill, CA 95037
For Mail Only:
P.O. Box 1000
Morgan Hill, CA 95038
Telephone: 408-779-7363
FAX: 408-779-8845
Limited Warranty: Amplifiers and Wattmeters; five years parts and labor, except one year on power transistors. Repeater Amplifiers: two years parts and labor, except one year on power transistors. Pre-amplifiers and Antennas: One year parts and labor.

RF CONCEPTS
1202 E. 23rd St.
Lawrence, KS 66046
Order/Product Info: 913-842-7745
Service/Tech Suppport: 913-842-4476
Hours: 9 am- 12 noon and 2 pm-5 pm, Mon-Fri
BBS support: 913-842-4476
24 hours (1200-14,400 v.32 bis 8 bits no parity)
FAX: 913-842-2021
Limited Warranty: One year, parts and labor; six months on power transistors.

STANDARD Amateur Radio, Inc.
For UPS:
R.M.A. Return Material Authorization number will be issued and current shipping address will be given to customer at that time.
For Mail Only:
P.O. Box 48480
Niles, IL 60648
Telephone: 312-763-0081
FAX: 312-763-3377
Limited Warranty: One year parts and labor on all products.

YAESU U.S.A.
17210 Edwards Road
Cerritos, CA 90701
Telephone: 310-404-2700
FAX: 310-404-1210
Limited Warranty: One year parts and labor on all products.

For other Warranty Information call the **AES Service Department** at
414-358-0333

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Policies • Warranties • Other Information . . .

A - NEW EQUIPMENT • In order to guarantee Factory Sealed, Factory Fresh equipment, no free trial or evaluation is offered by **AES®.** All New Equipment is warranted by the Manufacturer, unless otherwise stated. Authorized returns of merchandise on a timely basis, that is not defective, will be subject to a minimum 10% handling and restocking charge. If you have equipment that appears defective, call our Customer Service Department at (414) 358-0333 concerning the warranty repair procedure or a request for a return authorization. No returns on books, tapes or computer software – if defective, only an exchange will be made.

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G - EXPORTS • Welcome! … but buyer should be aware of **potential Warranty Problems.**

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